DIPTERA OF AUSTRALIA.

By Frederick A. A. Skuse.

Part VII.—THE TIPULIDÆ BREVIPALPI.

(Plates xxi-xxiv.)

The Tipulidæ or Crane-flies constitute a very extensive family, usually characterized by the great length and fragility of their legs, the absence of ocelli, a peculiar structure of the ovipositor, elongated basal cells to the wings, and the presence of a discal cell; but always to be distinguished from every other family in the division by the V-shaped transverse suture on the thorax.

This family is classified under two main divisions, the Tipulidæ brevipalpi and longipalpi, and two very small intermediate groups. In the first division the terminal joint of the palpi is little if anything longer than the two preceding joints, whilst in the second it is much longer and flagelliform. This peculiarity of the last joint of the palpi is in each division supported by numerous important subsidiary characters, a detailed account of which may be found in the works of Baron Osten-Sacken.

No Australian representatives of the two small intermediate groups, Cylindrotomina and Ptychopterina, have yet been found; the Tipulidæ longipalpi are however well represented, and will form the subject of a future paper.

The present instalment can be only a preliminary contribution to the knowledge of the Australian species of Tipulidæ brevipalpi; indeed, as can be readily seen, the bulk of the species hereafter treated of are known simply as being denizens of Sydney, the Blue Mountains, and the few other adjacent localities which have received anything approaching special collecting. Beyond

New South Wales the country has not been searched for Tipulidæ; only incidental or conspicuous specimens have been obtained by collectors whose pursuits were more particularly otherwise directed. There is most probably a wealth of material yet to be gathered, but unfortunately the investigators are limited.

The number of species referable to this division of the Tipulidæ, with which Australia has hitherto been credited, altogether does not exceed twenty-three. From this total four names must be sunk as synonyms, whilst a fifth, *Gynoplistia constans*, Saund., of Walker's list, seems to be that of an undescribed insect; the number being thus reduced to eighteen. This, however, must be supplemented by the names of three characterized species, viz. :— (1) *Gynoplistia annulata*, Westw., erroneously described as a native of North America, (2) *Libnotes strigivena*, Walk., originally found in New Guinea, and (3) *Conosia irrorata*, Wied., from Java, now recorded from Australia for the first time. To the final total of twenty-one species known to occur in this country, descriptions of about eighty new ones are added in the following pages.

It has been found necessary to introduce five new genera; one each in the sections Limnobina and Limnobina anomala, and three in Eriopterina. Though feeling very reluctant to propose new genera there seems to be no alternative in each case where it has been done. Besides these fresh genera, the genus *Geranomyia* has been split up into three sub-genera for the reception of species found to possess two-, three-, and four-jointed palpi respectively; also, a sub-genus of *Rhypholophus* is characterized. The entirety of the species are distributed as follows :—Limnobina [genera *Dicranomyia* 14, *Thrypticomyia* (gen.nov.) 1, *Geranomyia* 4, *Limnobia* 1, *Trochobola* 1, and *Libnotes* 1]; Limnobina anomala [*Rhamphidia* 4, *Orimarga* 2, *Leiponeura* (gen.nov.) 2, and *Teucholabis* 1]; Eriopterina [*Rhypholophus* 2, *Molophilus* 16, *Tasiocera* (gen.nov.) 2, *Erioptera* 1, *Trimicra* 2, *Gnophomyia* 1, *Goniomyia* 1, *Rhabdomastix* (gen.nov.) 1, *Lechria* (gen.nov.) 1, *Trentepohlia* 1, and *Conosia* 1]; Limnophilina [*Limnophila* 16, *Gynoplistia* 18, and *Cerozodia* 1]; and lastly Amalopina [genus *Ama-*

lopis 2]. It is interesting to note in all sections the occurrence of genera common to North America and Europe; and from this we are led to surmise that very probably many other generic forms prevalent in these two continents also have Australian exponents.

Six Australian species have been characterized by former authors, chiefly by Walker, under the generic title *Limnobia*, but not one of these is a *Limnobia*; two belong to *Trimicra*, one to *Gnophomyia*, two probably to *Limnophila*, and one to *Amalopis*. The species of *Gnophomyia* above referred to is *Limnobia fascipennis*, Thom., described from a female example; Baron O.-Sacken subsequently described the male of the same species under its correct generic name, but as *G. cordialis* (Studies II., p. 199, 1887).

Section I. LIMNOBINA.*

"One submarginal cell; four posterior cells. Normal number of antennal joints fourteen (sometimes apparently fifteen). Eyes glabrous. Tibiæ without spurs at the tip. Ungues with more or less distinct teeth on the underside. Empodia indistinct or none." (Osten-Sacken).

A very natural group, including less than a dozen genera, four at least of which, *Dicranomyia*, *Geranomyia*, *Limnobia* and *Trochobola* are cosmopolitan. No species of LIMNOBINA have yet been described from Australia; a fair number are now characterized for the first time, amounting altogether to about one-fourth of the Tipulidæ brevipalpi herein enumerated, a proportion which obtains also in the North American and European faunas.

---

* For further important particulars about the sections and genera, it is necessary that the student should consult the full descriptions by Baron O.-Sacken extant in his Monograph of the N. American Tipulidæ brevipalpi, also the subsequent observations in his "Studies on Tipulidæ," parts I. and II., published in the Berliner Entom. Zeits., 1886 and 1887; without which an adequate knowledge of the groups cannot be expected, but liability to serious blunder certainly the consequence.

Genus 1. Dicranomyia, Stephens.

Dicranomyia, Steph., Cat. Brit. Ins. 1829; Osten-Sacken, Mon. Dipt. N. Amer. IV. p. 53, 1869, pl. I, figs. 1, 2, 3 (wings), and pl. III. figs. 2, 3, 5 (genitalia); Studies II., p. 172, 1887.

"One submarginal cell; four posterior cells; discal cell present or absent; marginal cross-vein at the tip of the first longitudinal vein; tip of the auxiliary vein generally opposite or before the origin of the second longitudinal vein, seldom beyond it. Antennæ 14-jointed, joints sub-globular, elliptical, or short sub-cylindrical. Proboscis not longer than the head. Feet slender, tibiæ without spurs at the tip; empodia indistinct or none. The forceps of the male consists of two movable, soft, fleshy, subreniform lobes and a horny style under them." (Osten-Sacken).

This genus seems to be almost as numerously represented in Australia as it does in N. America and Europe. A few species have been described from New Zealand, one from Java, and one or two from South Africa. *Dicranomyia* also occurs in a fossil state in amber.

In all the specimens of Australian *Dicranomyiæ* examined by me, the discal cell is closed. The auxiliary vein usually terminates close to the origin of second longitudinal vein, but in *D. obscuripennis* and *annulipes* considerably beyond it; the position of the sub-costal cross-vein varies. In *D. incisuralis* the sub-costal cross-vein connects the auxiliary vein with the costa. The first longitudinal vein is sometimes arcuated near its tip, thus causing an expansion of the sub-costal cell; this occurs in *D. punctipennis*, and in a less degree in one or two other species. The first longitudinal vein is continued somewhat beyond the marginal cross-vein and joined to the costa by a supernumerary cross-vein in *D. saxatilis*. In *D. Helmsi*, *marina*, *remota*, *obscuripennis*, *auripennis*, *zonata*, and *incisuralis* the first longitudinal vein arcuates into the second and appears joined to the costa by a cross-vein. The præfurca is more or less arcuated, sometimes angularly bent near its origin with a small stump of a vein; and it varies in length from once to four times the length of the distance between origin of third

longitudinal vein and small cross-vein ; in most species it is short. Discal cell more or less square, usually longer than wide ; in *D. punctipennis* about four times longer than wide. The great cross-vein usually close to or at the inner end of the discal cell, but in *D. remota* a distance more than its length before it.

290. Dicranomyia punctipennis, sp.n. (Pl. xxi., fig. 1).

♀.—Length of antennæ..... 0·050 inch ... 1·27 millimètres.
Expanse of wings..... 0·340 × 0·090... 8·62 × 2·27
Size of body..... 0·280 × 0·040... 7·10 × 1·01

Head, including rostrum, palpi and antennæ, brownish-black, the head pruinose with greyish ; rostrum rather prominent. Thorax dull dusky brown, pruinose with greyish, with three umber-brown stripes, the lateral ones extending posteriorly beyond the suture ; mesosternum dusky brown, pruinose with greyish. Halteres pallid, the club somewhat infuscated. Abdomen dark brown, ovipositor ferruginous-brown. Legs brown ; coxæ ochraceous ; femora more or less ochraceous for their basal half, those of the fore legs often entirely brown. Wings almost hyaline, stigma pale ; origin and tip of all veins (except tips of third longitudinal vein and anterior branch of fourth longitudinal vein), and all cross-veins, slightly clouded with dark brown ; seventh longitudinal vein somewhat bisinuated, with a very small brown spot on each curve above. Auxiliary vein reaching the costa beyond the origin of the præfurca, sometimes a distance equal to the length of marginal cross-vein ; sub-costal cross-vein a little before origin of præfurca ; first longitudinal vein suddenly strongly arcuated before its tip, the marginal cross-vein at the middle of this bend, and situated from the tip a distance usually rather greater than its length ; the latter consequently shortened and straight ; præfurca and that portion of third longitudinal vein before small cross-vein almost in straight line, both distances equal or the first a little longer ; small cross-vein very short ; discal cell closed, about four times longer than broad, the great cross-vein a little before, at, or somewhat beyond its inner end.

Hab.—Sydney, Berowra, Knapsack Gully, Blue Mountains, and Waterloo Swamps, near Sydney; July to September (Masters and Skuse).

Obs. 1.—I have before me only thirteen specimens of this rather remarkable species. The alar-venation is quite unlike any other species known to me, but somewhat resembles that of *D. longipennis*, Schum (Dipt. N. Amer. IV. pl. 1, f. 1). The wings, however, are of the usual shape.

Obs. 2.—In four specimens recently obtained at Woronora the vein-cloudings are almost entirely absent.

291. Dicranomyia saxatilis, sp.n. (Pl. xxi., fig. 2).

♀.—Length of antennæ.....	0·050 inch	...	1·27 millimètres.
Expanse of wings.....	0·320 × 0·085	...	8·12 × 2·14
Size of body.....,.....	0·260 × 0·040	..	6·62 × 1·01

Head brown, sericeous with yellowish. Rostrum, palpi and antennæ deep brown; the former shorter than head; joints of antennæ globose, separated by very short pedicels; terminal joint ovate. Thorax brown, sericeous with yellowish, with two small brown spots below the humeri, and two short parallel longitudinal lines having their base on the transverse suture; pleuræ somewhat sericeous with yellowish; scutellum and metathorax dark brown. Halteres pale ochreous-yellow, slightly infuscated. Abdomen dark brown, sparingly clothed with a light pubescence; ovipositor and anal segment ochraceous, the lower valve deep brown at base. Legs ochraceous-brown, all the joints dark brown at the tips; tarsi infuscated. Wings with greyish or brownish cloudings, particularly along the veins; four sub-hyaline spots in the first basal cell, the third extending to and filling the basal half of inner marginal cell; a more or less indistinct sub-hyaline spot at the base of each cell ending at apex of wing; one in discal cell; a small rounded one beyond tip of seventh longitudinal vein; and lastly another small rounded one at the anal angle; stigma scarcely darker than the pale cloudings; veins yellowish-brown.

Auxiliary vein reaching costa a short distance beyond origin of second longitudinal vein; sub-costal cross-vein situated immediately before the origin; first longitudinal vein continued somewhat beyond the marginal cross-vein, joined to costa by a supernumerary cross-vein exactly in line with and half the length of the marginal cross-vein; præfurca arcuated near its base, not quite twice the length of distance between origin of third longitudinal vein and small cross-vein; discal cell closed, the great cross-vein a short distance before its inner end.

Hab.—Near Coogee Bay, Sydney (Skuse). A single specimen.

Obs.—The peculiar wing-cloudings, thoracic markings, and character of the first longitudinal vein make this species easily distinguished.

292. Dicranomyia Helmsi, sp.n.

♂.—Length of antennæ.....	0·050 inch	...	1·27 millimètres.
Expanse of wings.....	0·300 × 0·080	...	7·62 × 2·02
Size of body.....	0·240 × 0·040	...	6·09 × 1·01
♀.—Length of antennæ.....	0·055 inch	...	1·39 millimètres.
Expanse of wings.....	0·350 × 0·090	...	8·87 × 2·27
Size of body.....	0·290 × 0·040	...	7·35 × 1·01

Head brown, sericeous with yellowish; rostrum, palpi and antennæ black; rostrum in ♂ rather shorter than, in ♀ as long as, the head. Thorax brown, sericeous with yellowish (shining when denuded of the bloom), the sericeous dust thickest at the sides, thus leaving a brownish median stripe; pleuræ, pectus, scutellum and metathorax sericeous with grey. Halteres pale, club infuscated. Abdomen dark brown, with the appearance of a yellowish or yellowish-grey bloom, sparingly clothed with yellowish pubescence; ♂ forceps inconspicuous, dark brown; ♀ ovipositor brownish-ochraceous. Legs blackish-brown, base of femora and the trochanters somewhat testaceous. Wings sub-hyaline, the veins almost imperceptibly clouded with pale greyish; stigma rather long, pale, indistinct; veins cinereous. Auxiliary vein

reaching costa a short distance before origin of second longitudinal vein ; sub-costal cross-vein situated before tip of auxiliary vein a distance rather shorter than the length of great cross-vein ; first longitudinal vein pale towards its tip, abruptly arcuating into second longitudinal at posterior end of stigma, joined to costa by a short pale cross-vein ; præfurca very angularly bent near its base, with a short stump of a vein, and not twice the length of distance between the origin of third longitudinal vein and small cross-vein, in ♀ only $\frac{1}{3}$ longer than it ; discal cell closed, the great cross-vein at its inner end.

Hab.—Mount Kosciusko, N.S.W., 5000 feet; March (Helms). *Two specimens in Coll. Australian Museum.*

Obs.—I have named this species after its discoverer, Mr. R. Helms, a most enthusiastic and skilful collector, engaged by the Trustees of the Australian Museum.

293. Dicranomyia obscura, sp.n.

♂.—Length of antennæ.....	0·030 inch	...	0·76 millimètre.
Expanse of wings	0·270 × 0·065	...	6·85 × 1·66
Size of body.....	0·180 × 0·030	...	4·56 × 0·76
♀.—Length of antennæ.....	0·045 inch	...	1·13 millimètres.
Expanse of wings	0·280 × 0·070	...	7·10 × 1·77
Size of body.....	0·240 × 0·035	...	6·09 × 0·88

Head brown, with a yellowish-grey bloom ; rostrum, palpi and antennæ black. Thorax greyish-brown, dull, with three brown stripes ; intermediate stripe broad, extending from collare to transverse suture ; lateral ones apparently not extending beyond the suture ; pleuræ with a somewhat yellowish-grey bloom. Halteres yellowish, the club usually infuscated. Abdomen more or less dusky brown ; ♂ forceps and ♀ ovipositor obscure testaceous. Legs brown, the basal portion of femora ochreous or greyish-tawny ; tip of tibiæ, and the tarsal joints, infuscated. Wings pellucid with a pale greyish tint, the stigma, cloudings on the

cross-veins, inner end of sub-marginal cells and origin of præfurca, darker greyish; origin of præfurca together with a small portion of first longitudinal vein and the tip of auxiliary vein often stained with deep brown; veins mostly sooty brown, the costa and first longitudinal vein obscure testaceous. Auxiliary vein reaching costa a little beyond origin of præfurca; sub-costal cross-vein near its tip; sub-costal cell uually very slightly wider at tip of first longitudinal vein on account of a slight arcuation of latter; marginal cross-vein a little before tip of first longitudinal vein; præfurca a little arcuated at base, about twice the length of distance between origin of third longitudinal vein and small cross-vein; discal cell closed, twice as long as broad; the great cross-vein situated more or less before its inner end.

Hab.—Sydney and Knapsack Gully, Blue Mountains; July to September (Masters and Skuse).

Obs.—I have five male and eleven female specimens before me for comparison; in one male specimen the wing-spots are entirely absent. This species at first sight closely resembles *D. punctipennis*.

294. Dicranomyia marina, sp.n. (Pl. xxi., fig. 3).

♂.—Length of antennæ.....	0·030 inch	...	0·76 millimètre.
Expanse of wings.....	0·250 × 0·060	...	6·34 × 1·54
Size of body...	0·180 × 0·030	...	4·56 × 0·76
♀.—Length of antennæ.....	0·035 inch	...	0·88 millimètre.
Expanse of wings.....	0·250 × 0·060	...	6·34 × 1·54
Size of body.....	0·210 × 0·030	...	5·33 × 0·76

Head brownish, the eyes approximate above; rostrum, palpi and antennæ brownish; rostrum a little longer than the head. Thorax pale dull ochreous-yellow; with three light greyish-brown stripes; posterior portion, with scutellum and metathorax having a hoary bloom. Halteres pale ochreous or whitish. Abdomen dull brown or brownish; ♂ forceps (Pl. xxiv., fig. 43) and ♀ ovipositor ochreous or brownish-ochreous; valves of the latter straight. Legs

greyish or greyish-ochreous. Wings with a slightly milky tint, or exhibiting somewhat the appearance of ground glass; viewed at a certain obliquity the veins of anterior margin seem indistinctly lighter at intervals; veins greyish; stigma indistinct. Auxiliary vein reaching costa a little beyond origin of second longitudinal vein; subcostal cross-vein near its tip; first longitudinal vein arcuated into the second, joined to costa by cross-vein; præfurca at least twice the length of distance between origin of third longitudinal vein and small cross-vein; discal cell closed, the great cross-vein situated at or somewhat before its inner end.

Hab.—Manly, near Sydney; March (Skuse).

Obs.—This insect was found very numerously on wet rocks and seaweed which are visited by the ocean spray at low tide and entirely covered by the water at high tide.

295. Dicranomyia remota, sp.n. (Pl. xxi., fig. 4).

♀.—Length of antennæ.....	0·050 inch	...	1·27 millimètres.
Expanse of wings	0·280 × 0·060	...	7·10 × 1·54
Size of body.....	0·260 × 0·030	...	6·62 × 0·76

Head, including rostrum, palpi and antennæ black; the tip of first joint of scapus, the entire second, and first two or three flagellar joints ochreous. Rostrum as long as the head. Thorax fulvous, levigate, with a brown median stripe; posterior portion, scutellum and metanotum pruinose, and except scutellum brownish; pleuræ pale fulvous. Halteres pale, the club infuscated. Abdomen brown, somewhat tinged with fulvous at the base and on the venter; ovipositor ferruginous. Legs light ochreous-brown; coxæ and basal portion of femora pale fulvous. Wings pellucid, clouded with brownish-grey and pale brown; the costal, sub-costal, both marginal cells and the sub-marginal cell almost entirely filled with pale brown; along the præfurca anteriorly, the stigma, and base of sub-marginal cell almost colourless; origin of second and third longitudinal veins, and bases of the branches of the fourth

longitudinal and all the cross-veins clouded with pale brown; posterior portion of wings faintly clouded with brownish-grey. Auxiliary vein reaching costa a little before origin of second longitudinal vein; sub-costal cross-vein situated before tip of auxiliary vein a distance equal to half the length of stigma; marginal cross-vein extremely indistinct, appearing as continuation of first longitudinal vein; præfurca angulated, not quite twice the length of distance between origin of third longitudinal vein and small cross-vein; discal cell closed, the great cross-vein situated before the inner end a distance greater than its length.

Hab.—Middle Harbour, near Sydney; September (Skuse).

Obs.—I have taken but one specimen of this species.

296. Dicranomyia dorsalis, sp.n.

♂.—Length of antennæ.....	0·050 inch	...	1·27 millimètres.
Expanse of wings..... ..	0·280 × 0·070	...	7·10 × 1·77
Size of body.....	0·210 × 0·030	...	5·33 × 0·76
♀.—Length of antennæ.....	0·045 inch	...	1·13 millimètres.
Expanse of wings.....	0·280 × 0·070	...	7·10 × 1·77
Size of body.....	0·250 × 0·030	...	6·34 × 0·76

Head and rostrum brown or yellowish-brown; palpi and antennæ dark brown or black; rostrum shorter than the head. Collare brown. Thorax fulvous or brownish-ochreous, somewhat shining, with three confluent brown or deep brown stripes, the lateral ones extending backwards beyond the suture; scutellum, metathorax and sternum brown or deep brown. Halteres infuscated, the base of the stem ochreous. Abdomen dark brown; ♂ forceps ochreous, testaceous or brownish; ♀ ovipositor short, pale at the base, the valves brown. Coxæ fulvous or ochreous. Remaining joints brown; femora usually paler at the tip; tibiæ and tarsi infuscated. Wings hyaline or nearly so; veins brown; stigma brownish-grey. Auxiliary vein reaching costa opposite or

a little beyond origin of second longitudinal vein; sub-costal cross-vein situated before its tip a distance nearly equal to length of stigma; marginal cross-vein pale, situated at distal end of stigma and tip of first longitudinal vein; præfurca arcuated, about one-third longer than distance between origin of third longitudinal vein and small cross-vein; discal cell closed, the great cross-vein at its inner end.

Hab.—Generally distributed in N.S.W. (Masters and Skuse).

Obs.—In drawing up the above description I have a large series of (nearly one hundred) specimens for comparison. Not a single specimen has the discal cell open.

297. Dicranomyia obscuripennis, sp.n.

♂.—Length of antennæ.....	0·065 inch	...	1·66 millimètres.
Expanse of wings.....	0·250 × 0·065	...	6·34 × 1·66
Size of body	0·220 × 0·035	...	5·58 × 0·88

Head including rostrum, palpi and antennæ black; face somewhat ochraceous-brown. Joints of antennæ with very short pedicels, becoming slender and elongated towards apex. Thorax brown, sub-levigate; lateral callosity of metanotum and two hind pairs of coxæ ochre-yellow. Halteres black, ochre-yellow at base of stem. Abdomen dark brown, the ventral segments bordered with ochre-yellow posteriorly; ninth segment ochre-yellow; forceps dark brown; fleshy lobes rather small, the rostriform appendage with two long erect bristles. Legs black. Wings pellucid, with a blackish tint; veins and stigma dusky. Auxiliary vein extending beyond the origin of second longitudinal vein half the distance to marginal cross-vein; sub-costal cross-vein near its tip;* first longitudinal vein arcuating into the second longitudinal vein, and connected by the cross-vein to the costa; marginal cross-vein and tip of second longitudinal

*It is difficult to tell which is the cross-vein and which the tip of the auxiliary vein.

cutting middle of stigma; præfurca a little arcuated at base, about three times the length of distance from origin of third longitudinal vein to small cross-vein; sub-marginal cell about $\frac{1}{5}$ longer than the first posterior; discal cell closed, the great cross-vein close to its inner end.

Hab.—Elizabeth Bay, near Sydney (Skuse). August.

Obs.—I have obtained only a single specimen.

298. Dicranomyia auripennis, sp.n.

♂.—Length of antennæ	0·050 inch	...	1·27 millimètres.
Expanse of wings.....	0·250 × 0·060	...	6·34 × 1·54
Size of body..	0·210 × 0·030	...	5·33 × 0·76

Head, including rostrum, palpi, and antennæ black. Rostrum as long as the head. Thorax fulvous or brownish-fulvous, levigate; pleuræ lighter fulvous. Halteres with a slightly infuscated club. Abdomen ochreous-brown, levigate, sparingly clothed with short yellow hairs; forceps brownish-yellow or somewhat fulvous. Legs brown; coxæ and basal portion of femora fulvous or brownish-yellow. Wings pellucid, with a yellowish tint, rather darker along anterior border between first longitudinal vein and costa, on anterior half between second longitudinal vein and costa, and extending downwards to the tip of the latter; brilliant margaritaceous reflections; stigma scarcely distinguishable. Auxiliary vein reaching the costa a little before or opposite the origin of the præfurca; sub-costal cross-vein pale, situated before the tip of auxiliary vein a distance equal to rather more than $\frac{2}{3}$ the length of the præfurca; marginal cross-vein indistinct, close to the tip of first longitudinal vein; the latter appearing as if incurved towards second longitudinal and joined by cross-vein to costa; præfurca about $\frac{1}{3}$ longer than the distance between origin of third longitudinal vein and small cross-vein; discal cell closed, the great cross-vein before its inner end.

Hab.—Mossman's Bay, near Sydney (Skuse); Blue Mountains, N.S.W. (Masters). September.

Obs.—Two specimens were found at Mossman's Bay in a cave facing the sea, only a single specimen at the Blue Mountains. The tinted and beautifully iridescent wings make this species easily recognised. It is evidently uncommon.

299. Dicranomyia zonata, sp.n.

♂.—Length of antennæ ..... — inch ... — millimètres.
Expanse of wings..... 0·220 × 0·055 ... 5·58 × 1·39
Size of body..... 0·210 × 0·030 ... 5·33 × 0.76

Antennæ wanting. Head, including rostrum and palpi, deep brown or black, the front hoary. Rostrum prominent, shorter than head. Thorax light brown, the humeri and posterior half of metanotum ochreous-yellow; a deep brown stripe laterally from collare to base of halteres, bordered beneath (including coxæ) with pale ochre-yellow; the mesosternum deep brown. Halteres deep brown, base of stem pale ochre-yellow. Abdomen deep brown, all segments bordered posteriorly with yellow equally distinctly above and beneath; levigate, with yellowish hairs; forceps deep brown. Legs, including trochanters, deep dusky brown. Wings pellucid, faintly tinged with brownish-grey; stigma elliptical, deep fuscous; veins deep fuscous; apex of wing and cross-veins a little infuscated. Auxiliary vein extending a short distance beyond origin of second longitudinal vein; subcostal cross-vein near its tip; first longitudinal vein ending in second longitudinal, connected by an indistinct cross-vein to costa scarcely beyond middle of stigma; præfurca moderately long, almost rectangularly bent near its origin, with a stump of a vein at the angle; sub-marginal cell about $\frac{1}{5}$ longer than first posterior cell; discal cell closed, the great cross-vein close to its inner end.

Hab.—Blue Mountains, N.S.W. (Skuse). One specimen.

300. Dicranomyia incisuralis, sp.n.

♀.—Length of antennæ..... 0·040 inch ... 1·01 millimètres.
Expanse of wings..... 0·210 × 0·050 ... 5·33 × 1·27
Size of body..... 0 200 × 0·025 ... 5·08 × 0·62

Head brown, pruinose with yellowish. Rostrum, palpi and antennæ black. Thorax ochreous with three brown stripes, lateral ones extending posteriorly beyond the suture; pleuræ with a brown stripe from beneath the humeri to the base of the halteres; prosternum with an oblong brown spot between the fore coxæ; mesosternum with two oblong brown spots between the intermediate coxæ; scutellum and metanotum brown or brownish. Halteres ochreous, the club infuscated. Abdomen brown; incisions between the superior segments ochreous-yellow, widened into roundish patches on the venter; ovipositor brownish-ferruginous, lower valves deep brown or black at the base, ochreous-yellow before their insertion. Legs brown; coxæ ochreous; femora pale at base and somewhat darker at apex. Wings pellucid with a pale brownish tint, the origin and tip of second longitudinal vein, origin of third longitudinal and the cross-veins somewhat clouded with brownish; stigma roundish, brown, very distinct. Auxiliary vein reaching the costa a little beyond the origin of second longitudinal vein, appearing as if incurved towards first longitudinal vein and connected before its tip by the cross-vein to costa; first longitudinal vein arcuated into the second longitudinal vein through the middle of stigma, and joined to costa by cross-vein; præfurca, also third longitudinal vein, angularly bent near the base (remaining portion almost straight), with a small stump of a vein at the angle (these small stumps are exhibited in all three specimens before me); præfurca varying from $2\frac{1}{2}$ to nearly 4 times the length of distance between origin of third longitudinal vein and small cross-vein; discal cell closed, the great cross-vein before or at its inner end.

Hab.—Wheeney Creek, Hawkesbury Dist. (Skuse); Sydney and Berowra (Masters). January.

Obs.—A single specimen was taken in each of the above-named localities. Closely allied to *D. zonata*, but certainly distinct.

301. Dicranomyia viridiventris, sp.n.

♂.—Length of antennæ..... 0·040 inch ... 1·01 millimètres.
Expanse of wings..... 0·250 × 0·050 ... 6·34 × 1·27
Size of body..... 0·180 × 0·025 ... 4·56 × 0·62

♀.—Length of antennæ..... 0·037 inch ... 0·92 millimètre.
Expanse of wings..... 0·250 × 0·050 ... 6·34 × 1·27
Size of body..... 0·195 × 0·030 ... 4·93 × 0·76

Head yellowish to brownish; rostrum shorter than the head, yellowish to brownish; palpi and antennæ brown; the first joint of scapus sometimes ochreous. Thorax pale greenish-yellow, sometimes darker (in one specimen even reddish-brown), shining, with indistinct traces of an intermediate stripe. Halteres pale green, the club very slightly darker. Abdomen green; ♂ forceps usually concolorous with rest of abdomen; ♀ ovipositor short, ochreous-brown. Legs yellowish or greenish-yellow; tibiæ and tarsi greyish. Wings hyaline; veins brownish; stigma greyish, sometimes indistinct. Auxiliary vein reaching costa opposite or somewhat before origin of second longitudinal vein; sub-costal cross-vein situated more than half the length of stigma distant from its tip; marginal cross vein at tip of first longitudinal vein; præfurca arcuated, only a little longer than distance between origin of third longitudinal vein and small cross-vein; discal cell closed, the great cross-vein at or somewhat beyond its inner end.

Hab.—Middle Harbour, near Sydney (Skuse). Three specimens.

Obs.—Three specimens captured by me at Knapsack Gully, Blue Mountains, appear to belong to this species, but they are too shrivelled to satisfactorily examine.

302. Dicranomyia cuneata, sp.n. (Pl. xxi., fig. 5).

♂.— Length of antennæ..... 0·035 inch ... 0·88 millimètre.
Expanse of wings..... 0·200 × 0·045 ... 5·08 × 1·13
Size of body..... 0·140 × 0·016 ... 3·55 × 0·40

Front, antennæ, and palpi brown; rostrum yellowish; terminal joint of antennæ with a slender cylindrical prolongation. Thorax pale brownish-ochreous, sub-nitidous; pleuræ paler ochreous, with an almost imperceptible greenish tint. Halteres long (1·01 mm.), slender, infuscated, pale at the base of stem. Abdomen olive-brown, the forceps very little paler. Legs dusky brown, the coxæ and extreme base of femora pale greenish-ochreous. Wings narrow, lanceolate, almost hyaline, with a slight greyish tint; stigma almost invisible; veins brown. Auxiliary vein reaching costa a little beyond origin of second longitudinal vein; sub-costal cross-vein situated before the tip of auxiliary vein a distance equal to rather more than half the length of præfurca; marginal cross-vein situated at tip of first longitudinal vein; præfurca about $2\frac{1}{2}$ times the length of distance between origin of third longitudinal vein and small cross-vein; discal cell closed, the great cross-vein at or before its inner end.

Hab.—Blue Mountains N.S.W. (Skuse). One specimen.

Obs.—The wings are considerably broader at the apex than those of *D. longipennis*, Schum; the basal portion is similar. The above-described appears closely allied to *D. halterata*, O.S. (Dipt. N. Amer. IV. p. 71).

303. Dicranomyia annulipes, sp.n.

♂.—Length of antennæ.....	0·040 inch	...	1·01 millimètres.
Expanse of wings.....	0·210 × 0·055	...	5·33 × 1·39
Size of body.....	0·140 × 0·025	...	3·55 × 0·62

Head, including rostrum, palpi and antennæ, deep brown, almost black. Thorax dull brown, somewhat sericeous on posterior portion, and also on scutellum and metanotum; pleuræ dull brown. Halteres fulvous. Abdomen ochreous-brown, the segments bordered at the sides with brown, tolerably well clothed with yellow hairs; forceps bright fulvous. Legs pale ochreous-brown; femora with a darker ring before apex, slightly paler a little before and after the ring; tibiæ and all tarsal joints tipped with deep brown

or black. Wings pellucid, with a slightly greyish tint, and rather indistinctly clouded with brownish; two very pale spots in first basal cell, one mid-way between humeral cross-vein and origin of præfurca, the other immediately beneath origin of præfurca; bases and tips of all the veins, and the cross-veins, more or less distinctly clouded; stigma elliptical, pale brownish; veins dark brown, the costa more fulvous. Auxiliary vein reaching the costa beyond the origin of second longitudinal vein a distance about equal to length of stigma; sub-costal cross-vein about midway between origin of second longitudinal vein and tip of auxiliary vein; marginal cross-vein close to tip of second longitudinal vein; præfurca about twice the length of the distance between origin of third longitudinal vein and small cross-vein; discal cell closed, the great cross-vein a little before its inner end.

Hab.—Hexham Swamps, near Newcastle, N. S. W.; April (Skuse).

Genus 2. THRYPTICOMYIA, gen. nov.

One sub-marginal cell; four posterior cells; discal cell present; marginal cross-vein before tip of first longitudinal vein; tip of auxiliary vein opposite origin of second longitudinal vein; præfurca as long as sub-marginal cell; a supernumerary cross-vein between the costa and the auxiliary vein. Wings lanceolate, very narrow towards the base. Antennæ 14-joined, joints sub-cylindrical; joints pedicelled; each joint with a moderately long stiff hair above (Pl. XXIV, fig. 45). Proboscis very short. Feet slender; tibiæ without spurs; ungues extremely minute with a tooth near the base; empodia wanting. Forceps of male similar to those of *Dicranomyia* (Pl. XXIV, fig. 44); two fleshy lobes with a horny style under them.

This genus though undoubtedly very closely allied to *Dicranomyia* may be readily distinguished by the structure of the antennæ, the cuneiformly narrowed base of the wings which has not the slightest indication of an anal angle, by the greater length of the first longitudinal vein and position of the marginal cross-vein, and lastly by the presence of a supernumerary sub-costal cross-vein.

304. Thrypticomyia aureipennis, sp.n. (Pl. xxi., fig. 6).

♂.—Length of antennæ..... 0·050 inch ... 1·27 millimètres.
Expanse of wings..... 0·190 × 0·040... 4·81 × 1·01
Size of body..... 0·165 × 0·020... 4·18 × 0·50

Head and antennæ brown; rostrum and palpi ochreous or brownish. Thorax short and arcuated, light ochreous-brown, somewhat darker in the mesonotum; sub-levigate. Halteres long, slender, infuscated, pale at the base of stem. Abdomen including forceps brown. Legs very slender. Coxæ and extreme base of femora ochreous; remaining joints brown, the tip of first tarsal joint and whole of last four joints white. Wings sub-hyaline, with extremely brilliant, chiefly golden, reflections; veins and stigma brown. Auxiliary vein reaching costa opposite origin of second longitudinal vein; sub-costal cross-vein a short distance (the length of marginal cross-vein) from its tip; supernumerary cross-vein situated about opposite inner end of first posterior cell; first longitudinal vein disappearing before end of stigma, the latter enveloping this vein from opposite inner end of sub-marginal cell; marginal cross-vein situated before tip of first longitudinal vein a distance at least equal to its length; præfurca slightly arcuated at its origin; discal cell usually longer than broad, sometimes nearly square; its inner end usually somewhat before inner end of first posterior cell, and its anterior angle sometimes with a small stump of a vein; great cross-vein situated about its middle.

Hab.—Sydney; six specimens (Masters).

Obs.—This insect has a very delicate aërial appearance.

Genus 3. Geranomyia, Haliday.

Geranomyia, Hal., Entom. Mag. I. p. 154, 1833; Curtis, Brit. Entom. XII. p. 573, 1835; *Limnobiorrhynchus*, Westw., Ann. Soc. Ent. Fr. 1835, p. 684; Trans. Ent. Soc. Lond. 1881, p. 375; *Aporosa*, Macquart, Dipt. Exot. I., p. 62, 1838; Loew, Linn.

Entom. V. p. 394, tab. II. f. 9-12, 1851; *Geranomyia*, Hal., Ins. Brit. iii. p. 310, 1856; *Plettusa*, Philippi, V. z.-b. G. Wien, p. 597, t. XXIII. f. 1, 1865; *Geranomyia*, O.-Sacken, Mon. Dipt. N. Amer. IV. p. 78, 1869; Wulp, v.d., Dipt. Neerl. p. 396, t. XII., f. 5-6, 1877; O.-Sacken, Studies, II. p. 173, 1887.

"One sub-marginal cell; four posterior cells; a discal cell. Antennæ 14-jointed, sub-moniliform; joints not pedicelled. Rostrum and proboscis prolonged, longer than the head and thorax taken together; the short palpi inserted about their middle. Feet slender; tibiæ without spurs at the tip; empodia indistinct or none; ungues with teeth on the under side. The forceps of the male like that of *Dicranomyia*, and consists of two fleshy, movable lobes, with horny appendages and a horny style under them." (Osten-Sacken).

Four species which I refer to this genus differ in the number of joints to the palpi; one species has only biarticulate palpi, two have them 3-jointed, whilst another has them 4-jointed. These differences compel me to suggest the institution of three sub-generic groups; in other respects these insects do not more than specifically differ from hitherto described *Geranomyiæ*. There has always seemed some doubt about the number of joints to the palpi. Haliday first of all believed them to consist of but one minute joint. Baron Osten-Sacken takes them to be biarticulate on the authority of Curtis; but the latter author himself queries the statement in his generic diagnosis. Having not a specimen of any described species it is impossible for me to more than surmise that upon careful examination the known examples, of which the majority prevail on the American continent, will be found to differ in the number of joints comprised in the palpi. The type of the genus, *G. unicolor*, Hal., probably has, but possibly may not have, only biarticulate palpi; and Curtis errs when he states that they are "attached to the anterior angles of the mentum." They are in reality attached to the sides of the labium below the point where the latter divides. The labium with the palpi can be drawn away from the other organs upon careful dissection.

Rostrum the length of the thorax only in *G. lutulenta* and *annulata;* as long as the thorax and head taken together in *G. picta* and *fusca.* Antennæ rather short, joints elliptical, sessile; sub-cylindrical in *G. fusca.* The basal joint of the palpi is always long and slender, about twice the length of the second joint (Pl. xxiv., figs. 46-48).

Venation similar to that of *Dicranomyia.* Auxiliary vein in *G. picta* reaching costa nearly opposite but somewhat beyond origin of præfurca, in the other species reaching considerably beyond. Sub-costal cross-vein always close to the tip of the auxiliary vein. The second longitudinal vein is rather angularly bent near its origin in the four species known to me, in *G. picta* and *annulata* with even a short stump of a vein at the angles. The sub-marginal cell is much longer than the first posterior cell. The discal cell is open in one specimen of *G. lutulenta,* and coalesces with the *third* posterior cell. In *G. picta* the great cross-vein is situated considerably before the inner end of discal cell.

In the male forceps the rostriform appendage of the fleshy lobes bears two short stiff bristles; in *G. fusca* this is situated much lower down the lobe than usual. The falciform appendages are long and curved. The anal style is large in *G. picta* (Pl. xxiv., fig. 49), but small and hammer-shaped in *fusca* (Pl. xxiv., fig. 50). These differences however may be only of specific importance.

Until further species have been studied it is impossible to fully define the three following sub-genera; other characters may be ultimately found to be constantly associated with the differences in the palpi.

1. Sub-genus *Geranomyia.* Palpi two-jointed. Proposed for the single species *G. picta* (Pl. xxiv., fig. 46).

2. Sub-genus *Triphana.* Palpi three-jointed. Proposed for the reception of two species, *G. lutulenta* and *annulata* (Pl. xxiv. fig. 47).

3. Sub-genus *Tetraphana*. Palpi four-jointed. One species, *G. fusca* (Pl. XXIV., fig. 48).

305. Geranomyia (Geranomyia) picta, sp.n.

♂.—Length of antennæ	0·060 inch	...	1·54 millimètres.
Expanse of wings.....	0·220 × 0·050	...	5·58 × 1·27
Size of body.....	0·240 × 0·030	...	6·09 × 0·76
♀.—Length of antennæ.....	0·050 inch	...	1·27 millimètres.
Expanse of wings.....	0·240 × 0·050	...	6·09 × 1·27
Size of body.....	0·210 × 0·030	...	5·33 × 0·76

Head, including proboscis, palpi and antennæ black; front with a greyish bloom. Palpi two-jointed. Collare brown. Thorax fulvous-brown, with a greyish bloom, traversed by three brown longitudinal stripes; the intermediate stripe extending to posterior border of metanotum. Halteres with infuscated club. Abdomen brown, ochreous or fulvous-brown on the venter; genitalia fulvous or brownish-ochreous. Coxæ fulvous; femora testaceous, darker at the tip; tibiæ and tarsi obscure testaceous, the terminal joint of latter infuscated. Wings pellucid, with a slight tint; the stigma and two spots on the distal half of anterior border brown; a small squarish spot at origin of præfurca, and a longish one on the costa beginning a short distance beyond stigma, and terminating at tip of third longitudinal vein; the cross-veins, inner ends of sub-marginal and sub-costal cells and fifth longitudinal vein clouded. Auxiliary vein reaching costa a little beyond origin of second longitudinal vein; præfurca angularly bent near its origin, generally with a small stump of a vein; marginal cross-vein and tip of first longitudinal vein pale, the latter arcuated into second longitudinal; sub-marginal cell nearly one-third longer than the first posterior; discal cell closed; the great cross-vein situated much before its inner end, and usually opposite inner end of first sub-marginal cell.

Hab.—Knapsack Gully, Blue Mts. ; North Waratah, near Newcastle, and Middle Harbour, near Sydney ; six specimens (Skuse).

306. Geranomyia (Triphana) lutulenta, sp.n.

♀.—Length of antennæ.....	0·070 inch	...	1·77 millimètres.
Expanse of wings.....	0·350 × 0·090	...	8·89 × 2·27
Size of body.....	0·280 × 0·040	...	7·10 × 1·01

Brown. Head including rostrum, palpi and antennæ black ; front with a greyish bloom. Palpi three-jointed. Thorax levigate, more or less ochreous or ochreous-brown at humeri; pleuræ with greyish bloom. Halteres infuscated, the base of stem ochreous-yellow. Ovipositor obscure testaceous. Coxæ and femora testaceous, the latter brown at the tip ; tibiæ and tarsi obscure testaceous or brownish, all the joints tipped with brown ; except the last three tarsal joints entirely blackish. Wings with a slightly greyish tint, with small indistinct greyish cloudings; stigma same tint as clouds ; first and fifth longitudinal veins marked with brown near the base of wing ; a squarish greyish cloud at origin of second longitudinal vein reaching costa anteriorly and fourth longitudinal vein posteriorly ; a small cloud enveloping tip of auxiliary vein and neighbouring portion of the first longitudinal vein ; a roundish cloud at base of sub-marginal cell, enveloping extremity of præfurca, and coalescing with stigma ; cross-veins and both ends of discal cell also clouded ; veins brown, the costa and first and fifth longitudinal veins yellowish, but the first longitudinal brown where enveloped by cloudings. Auxiliary vein reaching costa opposite middle of præfurca ; sub-costal cross-vein a short distance from its tip ; præfurca angulated near its origin ; discal cell closed, or opened posteriorly ; the great cross-vein at or before its inner end.

Hab.—Mount Kosciusko, N.S.W., 5000 ft. ; March (Helms).

Two specimens in Coll. Australian Museum.

Obs.—This is the only species in which I have observed the discal cell open among all the Australian Limnobina examined by me.

307. Geranomyia (Triphana) annulata, sp.n.

♂.—Length of antennæ.....	0·050 inch	...	1·27 millimètres.
Expanse of wings.....	9·280 × 0·065	...	7·10 × 1·66
Size of body.....	0·250 × 0·030	...	6·34 × 0·76

Head, including proboscis, palpi and antennæ dusky brown. Palpi three-jointed. Thorax fulvous-brown, shining, with three brown stripes; the intermediate stripe terminating before the suture; metathorax with hoary bloom; collare and pleuræ brown. Halteres with infuscated club. Abdomen brown; the forceps paler. Legs testaceous; fore femora with a brown ring at the tip, the intermediate and hind pairs with a narrow ring before the tip; terminal joints of tarsi somewhat infuscated. Wings almost hyaline; stigma and two spots brownish; the spots small, cloud-like; one at origin of second longitudinal vein, and the other enveloping tip of auxiliary vein, the sub-costal cross-vein and portion of first longitudinal; inner end of sub-marginal cell and veins indistinctly clouded. Auxiliary vein reaching costa nearer opposite inner end of sub-marginal cell than to origin of second longitudinal vein, and opposite tip of sixth longitudinal vein; sub-costal cross-vein close to its tip; præfurca angularly bent near its origin, with a short stump of a vein; tip of first longitudinal and marginal cross-vein pale, the former apparently very abruptly arcuated into second longitudinal vein; sub-marginal cell nearly one-fifth longer than first posterior cell; discal cell closed; the great cross-vein situated before its inner end a distance less than its length, and opposite inner end of sub-marginal cell.

Hab.—Berowra, N.S.W.; a single specimen (Skuse).

308. Geranomyia (Tetraphana) fusca, sp.n.

♂.—Length of antennæ.....	0·070 inch	...	1·77 millimètres.
Expanse of wings.....	0·310 × 0·080	...	7·87 × 2·02
Size of body.....	0·250 × 0·040	...	6·34 × 1·01

♀.—Length of antennæ.....	0·065 inch	..	1·66 millimètres.
Expanse of wings.....	0·320 × 0·080	...	8·12 × 2·02
Size of body.....	0·290 × 0·040	...	7·35 × 1·01

Dark brown. Head, including proboscis, palpi and antennæ sometimes black. Palpi four-jointed. Thorax light brown at the humeri; an intermediate brown stripe visible anteriorly. Halteres brown, somewhat ochreous at the base of stem. Abdomen blackish-brown; ♂ forceps concolorous with rest of body; ♀ ovipositor rather short, straight, the valves obscure testaceous. Legs entirely brown. Wings with a slight greyish tint, with very pale greyish-brown clouds; the stigma slightly darker; a squarish cloud at origin of second longitudinal vein, reaching costa anteriorly and fourth longitudinal posteriorly; a cloud between stigma and lower extremity of great cross-vein; and another at distal end of discal cell; the costa at end of marginal and sub-marginal cells somewhat clouded; veins dark brown. Auxiliary vein reaching costa more or less opposite middle of præfurca; sub-costal cross-vein near its tip; tip of first longitudinal and the marginal cross-vein pale; præfurca much angulated near its orgin; great cross-vein at inner end of discal cell.

Hab.—Lawson, Blue Mountains, N.S.W. (Masters). January.

Genus 4. Limnobia, Meigen.

Limnobia, Meig., Syst. Beschr. I. p. 116, 1818; *Limonia*, Meig., Ill. Mag. II. p. 262, 1803; *Limnobia* and *Glochina*, Meig., Syst. Beschr. VI. pp. 275-280, 1830; *Idioptera*, *Limnophila*, and *Limnobia*, Macquart, S.à B. I. pp. 94, 95, 100, 1834; Walker, Ins. Brit. III. p. 280, 1856; Zetterstedt, F. Lapp. 1840, Dipt. Scand. X. 1851; *Limnobia* (in its restricted sense), Stephens, Cat. Brit. Ins. 1829; O.-Sacken, Mon. Dipt. N. Amer. IV. p. 84, 1869; Studies, II. p. 177, 1887.

"One submarginal cell; four posterior cells; a discal cell. The marginal cross-vein is sometimes at the tip of the first longitudinal

vein, but often at some distance anterior to this tip, crossing the stigma; the tip of the auxiliary vein is usually far beyond the origin of the præfurca. Antennæ 14- (often apparently 15-) jointed. Feet comparatively strong; tibiæ without spurs at the tip; empodia indistinct or none; ungues with several teeth on the under side, giving them a pectinate appearance. The forceps of the male consists of two horny, movable hooks, and a horny style under them." (Osten-Sacken).

The species hereafter described seems to differ from typical *Limnobiæ* in having the general appearance of a *Dicranomyia*, being of moderate size, dull-coloured, etc.; also, the ungues do not exhibit a pectinate appearance, showing only indistinctly two minute teeth near the base. It is all the more remarkable that this species should be so *Dicranomyia*-like, as it belongs to the section having the cross-vein close to the tip of the first longitudinal vein, this latter character being always associated with the typical highly coloured *Limnobiæ*,* whilst in antennæ, structure of male forceps, and length of auxiliary vein it is a true *Limnobia*.

309. Limnobia bidentata, sp.n.

♂.—Length of antennæ.....	0·070 inch	...	1·77 millimètres.
Expanse of wings.....	0·300 × 0·080	...	7·62 × 2·02
Size of body.....	0·310 × 0·040	...	7·87 × 1·01
♀.—Length of antennæ.....	0·070 inch	...	1·77 millimètres.
Expanse of wings.....	0·320 × 0·085	...	8·12 × 2·14
Size of body.....	0·310 × 0·042	...	7·87 × 1·06

Head, including rostrum, palpi and antennæ black; rostrum short; first joint of scapus twice the length of the second. Thorax dark fuscous-brown, sometimes almost black with a greyish bloom; pleuræ and humeri sometimes slightly tinged with testaceous. Halteres testaceous, the club almost black. Abdomen

* Though also a character of the *Dicranomyiæ*.

deep brown or black, sparingly clothed with very short yellowish hairs; ♂ forceps (Pl. XXIV., fig. 51) concolorous with rest of body; ♀ ovipositor rather slender, slightly curved, the valves reddish-brown. Legs obscure testaceous; femora with a broad ring of brown at tip; tibiæ and first two tarsal joints slightly tipped with, and three last joints entirely, brown or black. Wings pellucid, with brownish tint; veins dark fuscous-brown, the præfurca and cross-veins clouded with brownish; costal cell, and distal half of marginal cell, also brownish; stigma small, round, dark fuscous, enveloping the tip of first longitudinal and marginal cross-vein. Auxiliary vein reaching costa opposite inner end of sub-marginal cell; sub-costal cross-vein close to its tip; first longitudinal vein abruptly arcuated into the second, joined to the costa by the cross-vein; the latter rather indistinct and pale; præfurca arcuated, sometimes with a small stump of a vein, about one-third longer than distance from origin of third longitudinal vein to small cross-vein; great cross-vein situated more or less before middle of discal cell; sixth longitudinal vein straight or nearly so; seventh a little arcuated at the tip.

Hab.—Gosford, Woronora and Manly, near Sydney (Skuse); Blue Mts. (Masters). January to March. Eighteen specimens.

Genus 5. Trochobola, Osten-Sacken.

Discobola, O.-Sack., Proc. Ent. Soc. Philad. p. 226, 1865; *Trochobola*, O.-Sack., Mon. Dipt. N. Amer. IV. p. 97, 1868; Studies, II. p. 178, 1887.

"One sub-marginal cell; four posterior cells; a discal cell; the tip of the auxiliary vein is far beyond the origin of the second longitudinal vein; the marginal cross-vein is some distance anterior to the tip of the first longitudinal vein; a supernumerary cross-vein connects the sixth and seventh longitudinal veins. Antennæ 14-jointed. Feet slender; tibiæ without spurs at the tip; empodia indistinct; ungues with teeth on the under side." (Osten-Sacken).

Three species belonging to this genus have been described, two occurring in Europe and one in North America; and according to Baron Osten-Sacken the genus also occurs in New Zealand. All known species exhibit a wonderful similarity and are difficult to separate; the wings are marked with numerous ocellate spots which vary little more in the different species than they do in individuals.

Prof. Mik (Verh. z.-b. Ges. in Wien, XXVIII. p. 617, 1879) discusses the described species, and establishes the distinction between the two European species by the structure of the male forceps and character of the wing-markings.

The species now described from Australia seems more closely related to *T. cæsarea*, O.-Sack., than to *annulata*, Linn. They agree very well in the picturing of the wings, except that *T. australis* has not the marmorated second basal cell so characteristic of *cæsarea*. The auxiliary vein (judging by Prof. Mik's figures) is not so long, the second longitudinal vein is more arcuated, and the third longitudinal vein more strongly converges towards the fourth. On the other hand, the structure of the holding forceps is more like that of *T. annulata*, possessing the rostriform appendage; it differs, however, in having the upper margin of the anal segment emarginate, and not dentate as in both European species.

310. Trochobola australis, sp.n. (Pl. xxi., fig. 7).

♂.—Length of antennæ..... 0·070 inch ... 1·77 millimètres.
Expanse of wings..... 0·340 × 0·080 ... 8·62 × 2·02
Size of body .... 0·250 × 0·030 ... 6·34 × 0·76

Head, including rostrum, palpi and antennæ, black. Collare ochreous-yellow. Thorax ochreous-yellow, almost covered with three broad brown stripes, levigate; pleuræ and metathorax dark brown; scutellum deeply bordered with brown. Halteres brown, the club and base of stem pale. Abdomen brown or brownish-ochreous (greenish-yellow while living), the first segment ochreous

yellow; genitals concolorous with rest of abdomen; fleshy lobes of ♂ forceps (Pl. xxiv., fig. 52), with a short rostriform appendage, the upper margin of horny plate between bases of basal pieces with a shallow emargination (not dentate as in *T. annulata* and *cæsarea*). Legs testaceous; femora with a brown or black ring before the tip, preceded and followed by ochreous-yellow; tip of tibiæ and terminal joints of tarsi brown or black. Wings broad, with a pale yellowish tint, with brown (blackish while fresh) ocellate cloudings; the greater portion of second basal cell, and a transverse recurved band across the middle of wing, clear of markings (except that there is the pupil of an incomplete ocellus at tip of sixth longitudinal vein); an almost complete ocellus, broken at the costa, has its pupil at the origin of second longitudinal vein; another almost complete one has the supernumerary cross-vein for its centre; the distal half of the wing is covered with more or less confluent ocelli, the centre spots of the most distinct being at sub-costal cross-vein, small cross-vein, basal half of great cross-vein and the cross-vein closing discal cell; a brown spot on the costa near base of wing encloses a pale spot at or somewhat beyond the humeral cross-vein; and another enveloping tip of first longitudinal and marginal cross-vein has a pale spot just before the tip of the former. Auxiliary vein reaching costa a short distance before inner end of sub-marginal cell; sub-costal cross-vein a short distance before its tip; first longitudinal vein arcuated towards its tip, forming a considerable expansion of the sub-costal cell; third longitudinal vein considerably converging towards the fourth at its tip.

Hab.—Sydney and Como, N.S.W. (Skuse); Waverley, near Sydney; October (Froggatt). Three male specimens.

Obs.—Baron O.-Sacken remarks that he knows at least three easily distinguishable species from S. E. Australia and New Zealand; the above-described is unfortunately the only one I have been able to find, and that only rarely.

Genus 6. Libnotes, Westwood.

Libnotes, Westw., Trans. Ent. Soc. Lond. 1876, p. 505, pl. III. fig. 6 b.; O.-Sacken, Studies II., p. 179, 1887.

One submarginal cell; four posterior cells; a discal cell; cells at distal half of wing of remarkable length and curvature; præfurca extremely short. Marginal cross-vein at or near the tip of the first longitudinal vein; the tip of the auxiliary vein far beyond the origin of the præfurca. Antennæ 14-jointed, the terminal joint with a slender elongation. Legs long, slender; tibiæ without spurs at the tip; empodia wanting; ungues dentate. Male forceps of similar structure to those of *Limnobia*.

311. Libnotes strigivena, Walker (Pl. xxi., fig. 8).

Limnobia strigivena, Walk., Journ. Linn. Soc. Lond. Vol. V., 1861, p. 229; *Libnotes strigivena*, O.-Sacken, Studies II., 1887, p. 183.

♂.—Length of antennæ.....	0·080 inch ..	2·02 millimètres.
Expanse of wings.....	0·600 × 0·095 ...	15·24 × 2·39
Size of body	0·350 × 0·055 ...	8·89 × 1·39
♀.—Length of antennæ.....	0.080 inch ...	2·02 millimètres.
Expanse of wings..	0·500 × 0·095 ...	12·70 × 2·39
Size of body. ..,.....	0·350 × 0·055 ...	8·89 × 1·39

Pale ochreous-yellow. Antennæ and palpi somewhat tinged with brownish; flagellar joints elliptical. Thorax, with the mesonotum, and lateral border to origin of wings, brown; more or less distinct traces of a double median stripe; a brownish triangular spot on each side above the origin of the wings; a small spot about equal in size to the last on the pleuræ; metanotum with a narrow lateral border of brown, which is continued as a brown line down the sides of the abdominal segments*; second segment with a median brownish marking; ♀ ovipositor short, little curved, ochraceous-brown. Fore coxæ bordered with brown anteriorly; femora with a more or less distinct brown ring a little before the

* The lateral line and thoracic markings are occasionally very indistinct, whilst in old specimens the sides of the segments of the abdomen sometimes overlap, and thus entirely conceal the line.

apex; tibiæ and first two tarsal joints at tip, and last three joints entirely, brown or blackish. Wings almost hyaline, somewhat opaline; veins pale ochreous (imparting a somewhat whitish appearance to the wings), marked with numerous small longitudinal brown spots, the two most distinct on the first longitudinal vein at origin of second longitudinal and tip of auxiliary vein; distal end of stigma, with tip of first longitudinal vein, slightly infuscated. Auxiliary vein joining costa almost opposite tip of fifth longitudinal vein; sub-costal cross-vein at its tip; marginal cross-vein close to tip of first longitudinal vein; inner end of second posterior cell much arcuated or rectangular, situated much before that of the third, with slight trace of a small stump of a vein at its angle; discal cell long and narrow, the great cross-vein at about one-third its length.

Hab.—Barron and Mulgrave Rivers, N. Queensland (Froggatt); also Fiji Islands. Five specimens.

Obs.—I believe this insect to be the same as *L. strigivena*, described by Walker, from Dorey, New Guinea. In arriving at this conclusion I have been greatly assisted by the additional notes on the venation of the wings in the table given by Baron O.-Sacken, (Studies, II. p. 183). A single specimen in the Macleay Museum labelled "Fiji," is undoubtedly identical with the above. Some very large specimens, also from the same locality, may possibly belong to a different species, but the venation and markings are very similar.

Section III. LIMNOBINA ANOMALA.

"One sub-marginal cell; normal number of the antennal joints sixteen." (Osten-Sacken).

An artificial group, proposed by Baron Osten-Sacken, to include certain genera, the structural relation of which, one to another, is in many instances obscure, if not distant. The normal number of joints of the antennæ is sixteen, as in the ERIOPTERINA and LIMNOPHILINA; but the tibiæ are spurless and the wings possess

only a single sub-marginal cell, both characters of the LIMNOBINA. Again, unlike the latter some of these genera exhibit distinct empodia, whilst, on the other hand, some do not have them. In short, although these genera appear, and probably are, arbitrarily grouped together, they certainly cannot be admitted elsewhere ; but in the present state of our knowledge the section is at least a convenient one.

Genus 7. RHAMPHIDIA, Meigen.

Leptorhina, Stephens, Catal. etc. 1829 ; *Megarhina*, St. Fargeau, Encycl. Meth. Ins. X., p. 585, 1825 ; *Helius*, St. Fargeau. l.c. Index, p. 831 ; *Rhamphidia*, Meig., Syst. Beschr. VI. p. 281, 1830 ; Macquart, S. à B. Dipt. I. p. 93, 1834 ; Walker, Ins. Brit. III. p. 308, 1856 ; Schiner, F. A., 1864 ; Osten-Sacken, Mon. Dipt. N. Amer. IV. p. 103, 1869 ; Studies II. p. 183, 1887.

"One sub-marginal cell ; four posterior cells ; a discal cell ; no marginal cross-vein. The tip of the auxiliary vein is at some distance beyond the origin of the second vein ; the sub-costal cross-vein is close at this tip. Rostrum elongated, but shorter than the thorax ; last joint of the palpi elongated. Antennæ 16-jointed. Tibiæ without spurs at the tip ; empodia indistinct ; ungues smooth. The forceps of the male very like that of *Elephantomyia*." (Osten-Sacken).

The rostrum is much longer than the head in three out of the four species known to me ; in *R. niveitarsis* only a little longer.

Only a few species of this genus are known, all, I believe, American and European. Four fossil species are stated by Loew to occur in Prussian amber (Bernst. und Bernstein fauna, 1850, p. 37).

312. RHAMPHIDIA COMMUNIS, sp.n. (Pl. XXI., fig. 9).

♂.—Length of antennæ.....	0·070 inch	...	1·77 millimètres.
Expanse of wings.....	0·380 × 0·090	...	9·64 × 2·27
Size of body.....	0·340 × 0·050	...	8·62 × 1·27
♀.—Length of antennæ.....	0·060 inch	...	1·54 millimètres.
Expanse of wings.....	0·380 × 0·090	...	9·64 × 2·27
Size of body.....	0·340 × 0·050	...	8·62 × 1·27

Head, including rostrum, palpi and antennæ, black; the rostrum $2\frac{1}{2}$-3 times the length of head. Thorax dark brown or fuscous, levigate, with four fulvous brown stripes; intermediate pair beginning at anterior border, coalescing at or a little before transverse suture and continuing to the scutellum; lateral ones broader, starting below the humeral pits, reaching a short distance beyond the suture, and opposite origin of wings; pectus, scutellum and posterior portion of metanotum sometimes more or less fulvous. Halteres yellow. Abdomen dark brown or fuscous, the segments bordered posteriorly with yellowish; genitalia brownish or yellowish-brown. Legs brown; femora becoming deep brown before tip; the tip of femora and extreme base of tibiæ yellow. Wings pellucid, with a pale brownish tint; veins, especially those enclosing discal cell, and the origin of præfurca, slightly clouded with brownish; yellow between costal and first longitudinal veins; veins and stigma dark fuscous; the later oblong. Auxiliary vein reaching costa a little before or opposite inner end of sub-marginal cell; sub-costal cross-vein at its tip, sometimes apparently obsolete; præfurca nearly straight; small cross-vein about half the length of the inner end of the second posterior cell; discal cell longer than broad, the great cross-vein at or a little beyond its inner end.

Hab.—Generally distributed in N.S.W.; September to April (Masters and Skuse).

Obs.—I have a series of about forty specimens for comparison. In some examples the light brown stripes on the thorax are very distinct, whilst in others the thorax is of a uniform dark brown with very faint or no traces of stripes.

313. Rhamphidia fulvithorax, sp.n.

♂.—Length of antennæ.....	0·050 inch	...	1·27 millimètres.
Expanse of wings.....	0·260 × 0·060	...	6·62 × 1·54
Size of body.....	0·240 × 0·030	...	6·09 × 0·76

Head greyish-brown; rostrum about the length of thorax, testaceous; palpi testaceous; antennæ dark brown. Thorax

fulvous or brownish-fulvous, levigate, without stripes; pectus and metathorax somewhat lighter. Halteres pale ochreous-yellow. Abdomen including genitalia brownish-fulvous, slightly infuscated. Legs light testaceous or brownish-ochreous, the femora pale at the tips preceded by a ring of brownish. Wings hyaline or almost so, slightly yellowish between first longitudinal vein and costa; veins testaceous-brown; stigma rather long, not very distinct, greyish. Auxiliary vein reaching costa at a point almost opposite inner end of sub-marginal cell; sub-costal cross-vein at its tip, appearing between it and first longitudinal vein; præfurca slightly arcuated at base; small cross-vein equal in length to inner end of second posterior cell; great cross-vein a little beyond inner end of discal cell.

Hab.—Narrabeen Lagoon, near Manly, N.S.W. (Skuse). One specimen in January.

314. Rhamphidia venusta, sp.n.

♂.—Length of antennæ.....	0·045 inch	... 1·13 millimètres.
Expanse of wings	0·290 × 0·060	... 7·35 × 1·54
Size of body	0.250 × 0·035	... 6·34 × 0·88
♀.—Length of antennæ	0·045 inch	... 1·13 millimètres.
Expanse of wings	0·290 × 0·060	... 7·35 × 1·54
Size of body.....	0.210 × 0·035	... 5·33 × 0·88

Head, including rostrum, palpi, and antennæ deep brown or blackish; the rostrum about twice the length of head. Thorax pruinose with pinkish- and yellowish-grey, with four deep brown velvety stripes, the intermediate pair beginning below the anterior margin and stopping before the transverse suture, the lateral ones broader, beginning below the humeri, reaching the scutellum and jutting triangularly opposite the origin of the wings; collare deep brown; mesonotum bordered by a deep brown broad line, usually sending back three small tooth-like offshoots, one at each humerus and a middle one (which sometimes meets the anterior extremity of the median longitudinal stripes); pleuræ with a

dark brown stripe; pectus and metanotum usually dark brown. Halteres pale yellow. Abdomen dark fuscous-brown; ♀ ovipositor ochraceous. Coxæ and femora yellowish-brown, sometimes darker; base of coxæ, the trochanters, and a broad ring at tip of femora, dark brown; tibiæ and tarsi greyish-brownish, more or less infuscated. Wings somewhat tinged; all the veins slightly clouded with greyish; a more or less distinct cloud at base of præfurca, sometimes another connecting stigma with discal cell, and less frequently a third at inner end of discal cell; stigma dark fuscous; veins cinereous, the costal and first longitudinal veins yellowish. Auxiliary veins reaching costa at a point a little before inner end of sub-marginal cell; sub-costal cross-vein at its tip, connecting it with first longitudinal vein; præfurca angularly bent near its origin, sometimes with a small tooth of a vein at the angle; small cross-vein shorter than inner end of second posterior cell; inner end of discal cell considerably larger than outer end, opposite tip of sixth longitudinal vein, and forming an angle much less than a right angle; great cross-vein situated a little beyond inner end of discal cell.

Hab.—Knapsack Gully, Blue Mountains; Clifton; and Middle Harbour, near Sydney (Skuse). Four specimens.

Obs.—In one specimen (in one wing only) a supernumerary cross-vein exists in the first basal cell, joining the second longitudinal vein near its origin.

315. Rhamphidia niveitarsis, sp.n.

♀.—Length of antennæ.....	0·047 inch	...	1·18 millimètres.
Expanse of wings,.....	0·270 × 0·057	...	6·85 × 1·44
Size of body.....	0·270 × 0·003	...	6·85 × 0·76

Head greyish-brown; rostrum a little longer than the head, basal portion ochreous, the tip brown; palpi brown; antennæ brown, the first joint of scapus usually ochreous. Collare tinged with brown. Thorax ochreous-brown (darker on mesonotum), somewhat shining; pleuræ ochreous, more or less hoary. Halteres infuscated, the

base of stem pale ochreous. Abdomen brown; venter more or less ochreous; ovipositor rather long, slightly curved, brown. Coxæ ochreous; trochanters very slightly tinged with blackish at tip; femora brown, white at tip; tibiæ brown with a slight ring at base, and a third of their length at distal end, white; tarsi entirely white. Wings hyaline, with brilliant purplish and golden reflections; veins brown; stigma pale, slightly tinted with brownish. Auxiliary vein reaching costa opposite or somewhat beyond inner end of first posterior cell; sub-costal cross-vein near its tip, connecting it with the first longitudinal vein; præfurca short, slightly arcuated at its base; petiole of sub-marginal cell rather more than half the length of præfurca; small cross-vein nearly as long as the great cross-vein; third posterior cell more than three times broader at the tip than at its inner end, principally owing to the divergence of the posterior branch of the fourth vein; great cross-vein situated about middle of discal cell, the latter slightly angulated at that point.

Hab.—Knapsack Gully, Blue Mountains, and Woronora, N.S.W. (Masters and Skuse). Six specimens.

Genus 8. Orimarga, O.-Sacken.

Limnobia, Zetterstedt, Dipt. Scand. X. p. 389, 1851; *Orimarga*, O.-Sack., Mon. Dipt. N. Amer. IV. p. 120, tab. 1. f. 9, 1869; *Ninguis*, Wallengren, Entom. Tidskr. Stockh. 1881 (on authority of Mik); *Orimarga*, O.-Sack., Studies II. p. 186, 1887.

"One sub-marginal cell; four posterior cells; discal cell open, coalescent with the second posterior cell; great cross-vein about the middle of the wing, and hence, the fourth posterior cell very long. Tibiæ without spurs at the tip; empodia distinct. Antennæ 16-jointed. Basal pieces of the male forceps elongated, slender, with horny, slender, claw-shaped appendages at the tip; upper valves of the ovipositor small, slender, pointed." (Osten-Sacken).

The following described are, as far as I can ascertain, the first species of this genus discovered out of Europe. Altogether only a few examples seem to be known.

316. Orimarga australis, sp.n. (Pl. xxi., fig. 10).

♂.—Length of antennæ.....	0·042 inch	...	1·06 millimètres.
Expanse of wings.....	0·250 × 0·042	...	6·34 × 1·06
Size of body.....	0·210 × 0·020	...	5·33 × 0·50
♀.—Length of antennæ.....	0·042 inch	...	1·06 millimètres.
Expanse of wings.....	0·270 × 0·045	...	6·85 × 1·13
Size of body.....	0·210 × 0·020	...	5·33 × 0·50

Head, rostrum, palpi and antennæ light reddish-brown; head hoary in a certain light; rostrum rather longer than the head. Thorax brownish-ochreous, hoary. Halteres pale. Abdomen brownish-ochreous to light reddish-brown; genitalia ferruginous. Legs uniformly pale yellowish-grey, apparently glabrous. Wings narrow, microscopically granulose, with a somewhat whitish appearance, non-iridescent; veins, like the membrane, colourless; stigma not visible. Auxiliary vein reaching costa opposite $\frac{2}{3}$ the length of præfurca; sub-costal cross-vein a little before tip of auxiliary vein; first longitudinal vein reaching costa at a point opposite tip of posterior branch of fourth longitudinal, and at $\frac{2}{3}$ the distance from tip of auxiliary vein to apex of wing; second longitudinal originating at about middle of the length of wing, angularly bent near its origin, then running almost straight; præfurca $\frac{2}{3}$ the length of sub-marginal cell; marginal cross-vein opposite small cross-vein, and at a point $\frac{1}{3}$ the distance from inner end of sub-marginal cell to tip of first longitudinal vein; veins inclosing first posterior cell almost parallel, slightly convergent towards their tips; inner end of second posterior cell a little before small cross-vein; great cross-vein a little oblique, situated at a point mid-way between origin of second longitudinal vein and inner end of submarginal cell; sixth longitudinal vein converging towards fifth longitudinal vein at the tip.

Hab.—Middle Harbour, near Sydney (Skuse). Three specimens.

Obs.—The alar venation of this species chiefly differs from that of *O. alpina*, Zett., figured by Baron O.-Sacken (Mon. Dipt. N.

Amer. IV. pl. 1. f. 9), in having the marginal cross-vein more remote from the tip of first longitudinal vein, and the great cross-vein not quite so near the middle of the wing.

317. Orimarga inornata, sp.n.

♀.—Length of antennæ	0·040 inch	... 1·01 millimètres.
Expanse of wings.....	0·200 × 0·040	... 5·08 × 1·01
Size of body.....	0·190 × 0·020	... 4·81 × 0·50

Head, including rostrum, palpi and antennæ, black; head hoary; rostrum about the length of the head. Thorax black, hoary. Halteres pale yellowish, the club somewhat infuscated. Abdomen deep fuscous-brown, somewhat shining; ovipositor ochreous-brown. Legs yellowish-brown; tarsi darker. Wings narrow, microscopically granulose, with a somewhat whitish appearance, weakly iridescent; veins pale; stigma not visible. Auxiliary vein reaching costa opposite a point somewhat before $\frac{1}{2}$ the length of præfurca; sub-costal cross-vein at tip of auxiliary vein; first longitudinal vein reaching costa opposite a point somewhat before tip of posterior branch of fourth longitudinal, and at $\frac{2}{3}$ the distance from tip of auxiliary vein to apex of wing; second longitudinal vein originating at about middle of the length of wing; præfurca moderately arcuated near its origin, nearly $\frac{2}{3}$ the length of sub-marginal cell; marginal cross-vein in advance of small cross-vein a distance equal to its length, and at a point mid-way between inner end of sub-marginal cell and tip of first longitudinal vein; marginal and small cross-veins equal in length; veins inclosing first posterior cell considerably convergent towards their tips; inner end of second posterior cell a little before small cross-vein; great cross-vein a little oblique, situated about mid-way between origin of second longitudinal vein and inner end of sub-marginal cell; sixth longitudinal vein converging towards fifth longitudinal at the tip.

Hab.—Clifton, Illawarra District (Skuse). One specimen in December.

Obs.—The great cross-vein is situated in very much the same position as in *O. australis;* the marginal cross-vein as in *O. alpina*, Zett. In one wing there is a supernumerary cross-vein near the base of the second posterior cell, thus inclosing a small square cell.

Genus 9. Leiponeura, gen. nov.

One sub-marginal cell; four posterior cells; discal cell sub-triangular; *no marginal cross-vein;* tip of auxiliary vein before or beyond the origin of second longitudinal vein; the sub-costal cross-vein at or a little before the tip of the auxiliary vein; third longitudinal vein considerably arcuated, joining margin close to tip of anterior branch of fourth longitudinal. Antennæ 16-jointed, short. Tibiæ without spurs at the tip; empodia distinct; ungues smooth.

Rostrum short, about half the length of the head. Palpi short, the first and last joints of equal length, and about equal to the second and third taken together (Pl. xxiv., fig. 53, palpi of *L. brevivena*). Antennæ short, if bent back would not reach the root of the wings; joints of the scapus of equal length, sub-cylindrical; joints of the flagellum elongate, with a minute pubescence and beset with short hairs; in *L. brevivena* the first two or three flagellar joints are sub-globose (Pl. xxiv., fig. 54). Eyes glabrous; front rather narrow. Collare short. The thorax with distinct shining humeral pits; transverse suture distinct. Upper valves of the ovipositor rather long, slender, pointed, curved upwards towards the extremity. Legs moderately long, slender, the femora incrassated at the tip; ungues very small, smooth. Wings rather long and narrow, with a semi-diaphanous appearance, and a weak iridescence; the pubescence on their surface extremely microscopic, as in *Antocha.** Anal angle of wings inconspicuous. Veins with a minute pubescence. Stigma long, indistinct. The tip of the auxiliary vein reaches beyond the origin of the second longitudinal vein in *L. gracilis*, a distance about twice the length of the great

* I could discover only minute dots with a $\frac{1}{4}$ in. objective.

cross-vein, but in *L. brevivena* it joins the costa about a similar distance before the origin; this is on account of the difference in the length and character of the præfurca, which in the first-named species originates at an acute angle about the middle of the length of the wing, but in a rounded angle considerably beyond the middle in *brevivena*. Marginal cross-vein wanting. Second longitudinal vein gently bending upwards to the margin; third longitudinal vein arcuated downwards, reaching the margin close to the tip of the anterior branch of the fourth longitudinal; so that the sub-marginal cell is enormously widened, and the first posterior cell extremely narrowed, at the wing-margin.

The sub-marginal cell is very little longer than the first posterior; the small or anterior cross-vein is arcuated and unusually long, being quite the length of the great cross-vein; consequently the inner end of the discal cell is very short, which causes the cell to be almost triangular; great cross-vein at, or a little before, the inner end of the discal cell; fifth and sixth longitudinal veins nearly straight; the seventh very slightly arcuated.

This genus appears to be somewhat related to *Antocha*, O.-Sack., on the one hand, and *Artarba*, O.-Sack., on the other; to the former in wanting the cross-vein, to the latter by the extremely microscopic pubescence of the wings, but in other particulars it seems to entirely differ. Unfortunately, not having a single male specimen, I cannot describe the holding-forceps. Both the following described have their pleuræ conspicuously striped with yellow and brown.

318. Leiponeura gracilis, sp.n. (Pl. xxi., fig. 11).

♀.—Length of antennæ.....	0·047 inch	...	1·18 millimètres.
Expanse of wings.....	0·240 × 0·050	...	6·09 × 1·27
Size of body.....	0·210 × 0·025	...	5·33 × 0·62

Head, including rostrum, palpi and antennæ, black, the front with a hoary bloom; sometimes the face and rostrum yellow. Thorax brown, opaque, with two small yellow spots behind the

suture in the middle, and one on each side above the origin of the wings; bordered laterally and in front by a narrow yellow stripe, followed on the pleuræ by three longitudinal stripes, brown and yellow alternately; scutellum yellow, somewhat tinged with brown anteriorly; metanotum deep brown. Halteres yellow. Abdomen brown, sometimes deep brown; venter and ovipositor usually pale ochreous-yellow. Legs light umber-brown, the terminal tarsal joints blackish. Wings slightly tinged with brownish-grey or very pale brownish; veins light umber-brown; stigma colourless or just perceptibly brownish, elongate, narrow, stretching almost the entire length of the ultimate section of the second longitudinal Auxiliary vein reaching costa considerably beyond origin of second longitudinal, usually a distance equal to about twice the length of great cross-vein; sub-costal cross-vein a little before the tip of auxiliary vein, sometimes even a distance equal to length of great cross-vein; præfurca equal in length to the continuation of the vein, originating at an acute angle; discal cell about half the length of second posterior cell; great cross-vein situated somewhat before its inner end.

Hab.—Knapsack Gully, Blue Mts., and Sydney, N.S.W. (Masters and Skuse.) Five specimens in September.

319. Leiponeura brevivena, sp.n.

♀.—Length of antennæ.....	0·037 inch	...	0·90 millimètre.
Expanse of wings.....	0·180 × 0·045	...	4·56 × 1·13
Size of body.....	0·150 × 0.020	...	3·81 × 0·50

Head, including rostrum, palpi and antennæ dark brown or black, the joints of the scapus ochraceous or light ferruginous. Thorax similarly coloured to that of *L. gracilis*; the first lateral yellow stripe, however, is much broader in this species, and the following brown one a mere line; and the yellow spots in front of the scutellum are indistinct. Halteres pale. Abdomen brown, each segment very slightly bordered posteriorly with

yellow; venter and ovipositor ochraceous-yellow. Legs pale brownish-ochreous. Wings with a delicate brownish tint, the stigma and extremity of first sub-marginal cell tinted somewhat darker; veins light brown; stigma not twice the length of great cross-vein. Auxiliary vein reaching costa before origin of second longitudinal vein a distance equal to the length of great cross-vein; sub-costal vein at tip of auxiliary vein; præfurca much arcuated near its base, originating considerably beyond the middle of the wing, shorter than the rest of the vein; discal cell nearly as long as the second posterior cell, its inner end almost an angle; great cross-vein situated a little before the inner end.

Hab.—Berowra, N.S.W. (Skuse). Two specimens in August.

Genus 10. Teucholabis, Osten-Sacken.

Teucholabis, O.-Sack., Proc. Ac. Nat. Soc. Philad. p. 223, 1859; Mon. Dipt. N. Amer. IV. p. 129, pl. I. fig. 12 (wing), pl. III. fig. 9 (genitalia), 1869; Studies, II. 188, 1887.

"One sub-marginal cell; four posterior cells; a discal cell; *first longitudinal vein very short*, its tip being but little beyond the middle of the length of the wing, nearly opposite or not much beyond the inner end of the sub-marginal cell. Wings very hyaline, stigma rounded. Antennæ 16-jointed. Rostrum cylindrical, distinctly prolonged, although shorter than the head. *Collare prolonged in a narrow linear neck.* Feet rather stout, hairy; tibiæ without spurs at the tip; empodia distinct, but small. Genitals of the male hairy on the outside; forceps with large, horny appendages and an anal style." (Osten-Sacken).

This genus also occurs in North and South America, Southern Asia and New Guinea; only a small number of species are known.

320. Teucholabis meridiana, sp.n.

♂.—Length of antenn ..... 0·055 inch ... 1.39 millimètres.
Expanse of wings..... 0·240 × 0·090 ... 6·09 × 2·27
Size of body ..... 0·230 × 0·035 ... 5·84 × 0·88

Head dark brown, hoary on the front. Rostrum about the length of the head, ochraceous; palpi and antennæ dark brown, the basal joints of the latter tinged with ochraceous, the flagellar joints gradually diminishing in size, large and globose at the base, becoming slender and oblong towards the tip. Thorax brownish-ochraceous, shining, with three deep brown or black stripes; intermediate one beginning at collare; lateral ones much broadened anteriorly, completely interrupted at transverse suture, with a yellow spot at their posteriorly extremity above the origin of the wings; scutellum yellow; metanotum deep brown, bordered with yellow at the sides; pleuræ ochraceous-yellow, with a dark brown stripe from humeri to pectus. Halteres yellow. Abdomen brown, anterior half of the segments brownish-ochraceous; forceps brown. Coxæ and femora ochraceous, the latter brown at the tip; tibiæ and tarsi brown. Wings almost hyaline, the cross-veins and apical margin of wing slightly infuscated with brownish, and the costal and sub-costal cells tinted with yellowish; costal, auxiliary and first longitudinal veins ochraceous, the rest brown; stigma rather small, brown. The venation exactly like that of *T. complexa*, O.-Sack., (Mon. Dipt. N. Amer. IV. pl. I. fig. 12), except that the sub-costal cell is a little expanded near the stigma, the third longitudinal vein and anterior branch of the fourth longitudinal run almost straight to the margin, the sixth longitudinal vein is a little sinuated at the tip, and that of the seventh considerably arcuated. Great cross-vein situated beyond small cross-vein, and about opposite tip of first longitudinal vein.

Hab.—Victoria. *Type-specimen in Coll. Australian Museum.*

Obs.—Very closely related to *Teucholabis complexa*, O.-Sack., from North America.

Section III. ERIOPTERINA.

"*Two sub-marginal cells;* four (very seldom five) posterior cells; discal cell sometimes closed, but very often open. Normal number of the antennal joints sixteen. Eyes glabrous. *Tibiæ without spurs at the tip;* empodia distinct; ungues smooth on the under side." (Osten-Sacken.)

Rather more than a dozen genera, chiefly American and European, are referred to this section; a few of them doubtfully. Some of them, as remarked by Baron Osten-Sacken, seem to exhibit the aspect of the Limnophilina. *Conosia* is one of these puzzling genera. Outside of America and Europe very little has been done amongst the Eriopterina. Dr. E. Bergroth has recently described about half a dozen species from South Africa, for one species of which he erects the new genus *Podoneura;* only three species have hitherto been recorded from Australia, two belonging to the genus *Trimicra*, and one to *Gnophomyia*.

Genus 11. Rhypholophus, Kolenati.

Rhypholophus, Kolenati, Wiener Entom. Mon. p. 393, 1863; O.-Sacken, Mon. Dipt. N. Amer. IV. p. 139, pl. 1. figs. 14 and 15, 1869; Studies, II. p. 192, 1887.

"Two sub-marginal cells; four posterior cells; discal cell present or absent. *Wings pubescent on the whole surface.* The second longitudinal vein originates at a more or less acute angle, before the middle of the anterior margin; the sub-costal cross-vein is a considerable distance (two or three lengths of the great cross-vein) anterior to the tip of the auxiliary vein. Antennæ 16-jointed. Tibiæ without spurs at the tip; ungues smooth on the underside; empodia distinct." (Osten-Sacken.)

Sub-genus, Amphineurus, sub-gen. nov.

No discal cell. Posterior branch of fourth longitudinal vein forked; base of the fork (third posterior cell) situated at or a little before base of second posterior cell; the second and third posterior cells running almost to a point at the base. Second longitudinal vein arcuated or angulated at its origin, sometimes with even a short stump of a vein; the sub-costal cross-vein situated only a short distance beyond this origin.

In the main characters these insects appear to agree with *Rhypholophus*, but the peculiar modification of the second and third posterior cells, constant in both species, is a distinctive

characteristic, evidently of more importance than the mere absence of a discal cell under ordinary circumstances. They also apparently differ from the typical species of *Rhypholophus* in having the second longitudinal vein arcuated or even angulated at the base. It is unfortunate that all the specimens before me are females, as an examination of the male forceps would be interesting.

The hind femora are at least one-third longer than the intermediate pair, and distinctly wider than in either this or the fore pair. The third longitudinal vein, beyond the small cross-vein, is perfectly straight, and noticeably thicker than the other veins terminating at the apex of the wing. (Pl. xxi., fig. 12).

321. Rhypholophus (Amphineurus) umbraticus, sp.n.

♀.—Length of antennæ.....	0·050 inch	...	1·27 millimètres.
Expanse of wings.....	0·260 × 0·080	...	6·62 × 2·02
Size of body	0·200 × 0·035	...	5·08 × 0·88

Head dark brown, clothed with golden-yellow hairs; palpi, rostrum, and antennæ brown, the first few joints of antennæ and last joint of palpi more or less ochreous. Thorax deep fuscous-brown, opaque, sparingly sprinkled with short hairs; lateral margin from humeri to base of wings tinged with ochreous; scutellum paler fuscous, or even ochreous-brown. Halteres ochreous with fuscous stem, the base more or less ochreous. Abdomen deep brown, clothed with yellow hairs; pectus and ovipositor ochreous-yellow or brownish-ochreous. Legs ochreous-brown to fuscous, terminal tarsal joints infuscated. Coxæ usually ochreous or brownish-ochreous. Wings pellucid (when denuded) tinged with brownish-yellow anteriorly and along the fifth longitudinal vein; densely covered with brown hairs, which appear darker (being thicker) at the tips of the auxiliary and first longitudinal veins and about the great cross-vein; veins pale brownish-ochreous. Auxiliary vein strong and distinct, reaching costa beyond marginal cross-vein a distance equal to the length of latter; sub-costal cross-vein situated a short distance beyond origin of

second longitudinal vein; first longitudinal pale at its tip; sub-costal cell very slightly expanded at tip of first longitudinal vein; petiole of first sub-marginal cell about twice the length of distance between origin of third longitudinal vein and small cross-vein; præfurca angularly bent near its origin, with a small stump of a vein; base of fork of posterior branch of fourth longitudinal vein situated a little before inner end of second posterior cell; great cross-vein joining fourth longitudinal vein a little before inner end of third posterior cell.

Hab.—Lawson, Blue Mountains, N.S.W.; January (Masters).

322. Rhypholophus (Amphineurus) maculosus, sp.n.

♀.—Length of antennæ.....	0·040 inch	...	1·01 millimètres.
Expanse of wings	0·220 × 0·050	...	5·58 × 1·27
Size of body.....	0·180 × 0·020	...	4·56 × 0·50

Greyish-brown. Head somewhat sooty-brown, with short yellow hairs, palpi, rostrum, and antennæ brown; joints of flagellum sub-elliptic, with short hairs. Thorax opaque; pleuræ with two longitudinal narrow stripes of brown, the first from base of fore coxæ to base of halteres, the second above base of intermediate and hind coxæ. Halteres slightly yellowish at the base. Abdomen somewhat shining, clothed with short yellow hairs, the segments slightly ochreous laterally; ovipositor ochreous-brown, the upper valves curved. Coxæ and base of femora ochreous or greyish-ochreous; genua pale. Wings with a greyish tint; clothed with small alternate patches of pale yellow and blackish pubescence, giving the wing a somewhat indistinct spotted appearance; veins ochreous-yellow, the costal, and first, third, and fifth longitudinal veins most distinctly so. Auxiliary veins reaching costa at a point opposite marginal cross-vein; sub-costal cross-vein indistinct, situated a short distance beyond origin of second longitudinal vein; first longitudinal vein pale to its tip; marginal cross-vein at or a little beyond base of first sub-marginal cell; præfurca arcuated at its origin; petiole of first sub-marginal cell very short, as long or

a little longer than distance between origin of third longitudinal vein and small cross-vein; base of third posterior cell situated very slightly before that of second posterior; great cross-veins joining fourth longitudinal vein a short distance before inner end of third posterior cell.

Hab.—Mount Kosciusko, N.S.W., at 5000 ft.; March (Helms).

One specimen in Coll. Australian Museum.

Genus 12. Molophilus, Curtis.

Molophilus, Curtis, Brit. Ent. X. p. 444, 1833; O.-Sacken, Mon. Dipt. N. Amer. IV. p. 153, pl. I. fig. 19, 1869; Studies, II. p. 192, 1887.

"Two submarginal cells; four posterior cells; discal cell open. *Wings pubescent along the veins only.* Second longitudinal vein usually originates at a very acute angle, some distance before the middle of the anterior margin; subcostal cross-vein is at a considerable distance from the tip of the auxiliary vein; the *præfurca ends in the first submarginal cell*, which is longer than the second; the inner end of the discal cell (or rather, as it is always open, of the second posterior cell), as well as the great cross-vein, not in one line with the small cross-vein, but much nearer to the root of the wing. Antennæ 16-jointed. Tibiæ without spurs at the tip; ungues smooth on the under side; empodia distinct." (Osten-Sacken.)

I quite agree with Baron Osten-Sacken that this is a distinct genus. To the American, European, and New Zealand species already recorded, I now add fourteen species from Australia. It appears to be one of our best represented genera, both as regards species and individuals. Some species are very numerous.

The venation seems to be very much the same in all the following species, not exhibiting any noticeable specific characters; the hairy clothing of the veins, however, differs in length and density. *Molophilus longicornis* is remarkable in possessing very long antennæ.

The tibiæ of the males in some, if not the majority, of species exhibit a sexual character which does not appear to have been noted, or recorded, by previous authors. This is an annular swelling or nodosity, hardly perceptible in some instances but often prominent and dark-coloured, situated close to the base of the fore tibiæ. It would seem that North American species do not have this, since Baron Osten-Sacken does not allude to it in his monograph and being present it could scarcely have escaped his notice.

323. Molophilus ruficollis, sp.n.

♂.—Length of antennæ.....	0·070* inch	...	1.77 millimètres.
Expanse of wings.....	0·220 × 0·065	...	5·58 × 1·66
Size of body.....	0·170 × 0·035	...	4·31 × 0·88
♀.—Length of antennæ	0·070 inch	...	1·77 millimètres.
Expanse of wings.....	0·220 × 0·065	...	5·58 × 1·66
Size of body.....	0·180 × 0·035	...	4·56 × 0·88

Head, including rostrum, palpi, and antennæ dark brown; flagellar joints sub-cylindrical, somewhat fusiform, densely and uniformly verticillate-pilose; collare with long golden hairs. Thorax reddish-brown, levigate, with two longitudinal rows of brown hairs; humeri with an ochreous spot; a patch of long yellow hairs behind the origin of wings. Halteres light fulvous-brown with golden pubescence. Abdomen dusky brown, clothed with golden-yellow pubescence; male forceps reddish-brown; ovipositor short, curved, ochreous, or brownish-ochreous. Coxæ reddish-brown. Remaining joints dusky brown; the femora with a yellow ring a little before their tip (broader on the hind pair); hind femora stout. Wings sub-hyaline (when denuded); somewhat clouded in the vicinity of bases of sub-marginal cells; the veins brownish, with dense long hairs, covering the cells; the

* The stated length of the antennæ in this and some of the following small insects is only approximate, owing to their being sometimes very difficult to measure.

hairs dusky brown, with a dull somewhat cupreous reflection; more dense and forming a transverse somewhat indistinct clouding between tip of auxiliary vein and base of first posterior cell, also on great cross-vein and basal portion of posterior branch of fourth longitudinal vein.

Hab. — Lawson, Blue Mountains, N.S.W. (Masters). Six specimens in January.

324. Molophilus femoratus, sp.n.

♀.—Length of antennæ.. ...	0·050 inch ...	1·27 millimètres.
Expanse of wings.....	0.180 × 0·050 ..	4·56 × 1·27
Size of body..	0·125 × 0·023 ...	3·16 × 0·58

Head, including rostrum and palpi, dark brown, densely covered with brown hairs; antennæ more ochreous-brown, with long, dense, brown verticils; flagellar joints almost fusiform. Thorax greyish-brown, levigate; humeri slightly tinged with ochreous; pleuræ and metathorax reddish-brown. Halteres greyish-brown, the base of stem ochreous. Abdomen dark, somewhat reddish-brown, clothed with tolerably long, yellowish hairs; ovipositor short, curved, brownish-ochreous. Coxæ testaceous or brownish-ochreous. Remaining joints dark brown; all the femora with a broad ring of fulvous much (twice its length) before their tips; the hind femora very stout. Wings sub-hyaline (when denuded); veins pale, densely beset with long brownish hairs; the latter rather more dense and forming an indistinct narrow transverse clouding from tip of auxiliary vein to base of first posterior cell.

Hab.—Lawson, Blue Mountains, N.S.W. (Masters). January.

Obs.—I have only a single specimen before me.

325. Molophilus Helmsi, sp.n.

♂.—Length of antennæ.....	— inch ...	— millimètres.
Expanse of wings.....	0·250 × 0·065 ...	6 34 × 1·66
Size of body	0·180 × 0·037 ...	4·56 × 0·90

♀.—Length of antennæ.....	0 060 inch	...	1·54 millimètres.
Expanse of wings.	0·270 × 0·070	...	6·85 × 1·77
Size of body.....	0·185 × 0·040	...	4·68 × 1·01

Dusky brown. Head, including rostrum, palpi, and antennæ black or deep brown; joints of the flagellum fusiform, with some long verticillate hairs. Thorax levigate, with two longitudinal rows of golden hairs; humeri tinged with ochreous-yellow. Halteres with a dense pale yellowish sericeous pubescence, the base of stem brown. Abdomen clothed with golden-yellow hairs; male forceps black; ovipositor ochreous, the lower valve brown. Legs entirely dusky or sooty brown. Wings sub-hyaline, the veins yellowish, with dense long hairs covering the cells; the hairs chiefly dusky brown, with some golden patches; an elongate patch of golden hairs on costa immediately beyond the tip of auxiliary vein; that portion of first longitudinal vein before the costal patch, the third longitudinal vein except at its base and towards its extremity, portions of veins in the middle of the wing, and fifth, sixth and seventh longitudinal veins, with golden hairs; marginal cilia dusky brown variegated with golden.

Hab.—Mount Kosciusko, N.S.W., at 5000 ft.; March (Helms).

Two specimens in Coll. Australian Museum.

326. Molophilus notatipennis, sp.n.

♀.—Length of antennæ.....	0·050 inch	...	1·27 millimètres
Expanse of wings.....	0·220 × 0·050	...	5·58 × 1·27
Size of body.....	0·140 × 0·025	...	3·55 × 0·62

Head, including rostrum, palpi, and antennæ, dark brown; flagellar joints subcylindrical, rather larger towards their base, verticillate-pilose. Thorax reddish-brown, levigate, with two sparse longitudinal rows of brown hairs; humeri, base of wings and centre of transverse suture ochre-yellow. Halteres pale yellow, with a sericeous pubescence. Abdomen dusky or deep umber-brown, clothed with yellow hairs; ovipositor brownish-ochreous,

valves very short. Coxæ ochreous. Remaining joints dusky brown, the knees pale yellow or whitish. Wings sub-hyaline (when denuded); the veins pale brownish, with dense long hairs covering the cells; hairs brown, more dense and forming five blackish clouds as follows:—first at the bases of the submarginal cells, second at the basal portion of posterior branch of fourth longitudinal fork, another at the middle of third longitudinal vein, another near base of fourth and fifth longitudinal veins, and the last beyond middle of seventh longitudinal vein.

Hab.—Gosford, N.S.W. (Skuse). One specimen in August. Taken flying about a tree-trunk.

327. Molophilus Froggatti, sp.n.

♀.—Length of antennæ.....	0·090 inch	...	2·27 millimètres.
Expanse of wings.....	0·290 × 0·080	...	7·35 × 2·02
Size of body.....	0·320 × 0·045	...	8·12 × 1·13

Head brown, pruinose with greyish; front with short black hairs; occiput with long golden-yellow hairs, rostrum, palpi, and antennæ black, the two basal joints of the latter brown; flagellar joints sub-cylindrical. Thorax light greyish-brown, dull, with three darker though indistinct brown stripes; intermediate stripe double; humeral pits and suture deep shining brown; pleuræ with a hoary bloom. Halteres pale ochreous-yellow. Abdomen brown, somewhat greyish, tolerably shining, clothed with brown hairs; venter ochreous-yellow; ovipositor rather long, curved, ferruginous. Legs obscure testaceous, densely clothed with hairs which exhibit a yellow reflection when viewed at a certain obliquity; tibiæ black at tip; apical half of first and whole of remaining joints of tarsi black. Wings with a light greyish-brown tint; veins yellowish-brown, densely and uniformly beset with long brown hairs. Second sub-marginal cell longer than the first posterior; inner end of third posterior cell opposite that of first sub-marginal cell; great cross-vein long and very oblique,

joining close to base of posterior branch of fourth longitudinal vein.

Hab.—Waverley, near Sydney ; in October (Froggatt).

Obs.—I have seen only one specimen of this very distinct and comparatively large example of the genus.

328. Molophilus montivagus, sp.n.

♀.—Length of antennæ.....	0·045 inch	...	1·13 millimètres.
Expanse of wings.....	0·220 × 0·065	...	5·58 × 1·66
Size of body.....	0.180 × 0·035	...	4·56 × 0·88

Head greyish-brown, with a minute yellowish pubescence ; rostrum, palpi and antennæ black or dark brown ; flagellar joints elliptical, with short verticils. Collare ochreous. Thorax light ochreous-brown, almost covered by a very broad brownish median stripe ; the whole pruinose with greyish ; humeri slightly ochreous yellow ; pleuræ dusky brown. Halteres very pale yellow, with a sericeous pubescence. Abdomen dusky brown, opaque, clothed with yellow hairs, the segments with an indistinct narrow border of dull ochreous-brown posteriorly ; ovipositor testaceous. Coxæ dull testaceous. Remainder of joints uniformly dusky brown. Wings sub-hyaline ; veins ochreous-yellow, sparingly beset with short grey hairs, imparting to the wings a light greyish appearance.

Hab.—Jindabyne, N.S.W., 3000 ft., March (Helms). *One specimen in Coll. Australian Museum.*

329. Molophilus gracilis, sp.n.

♂.—Length of antennæ.....	0·070 inch	...	1·77 millimètres.
Expanse of wings.....	0·220 × 0·055	...	5·58 × 1·39
Size of body.....	0·160 × 0·030	...	4·06 × 0·76
♀.—Length of antennæ.....	0.055 inch	...	1·39 millimètres.
Expanse of wings.....	0·220 × 0·055	...	5·58 × 1·39
Size of body.....	0·180 × 0·030	...	4·56 × 0·76

Head greyish or greyish-ochreous, the anterior portion of the front sometimes yellow; rostrum and palpi black or deep brown; antennæ brown, the basal joints ochreous; flagellar joints fusiform, with greyish verticils, longer in male. Collare yellow. Thorax greyish-ochreous or light greyish-brown, with a greyish bloom, sometimes with indistinct trace of a double median longitudinal stripe; humeri and a narrow lateral line to origin of wings yellow; metathorax and pleuræ brown to dark brown; scutellum ochreous, brownish or testaceous. Halteres yellow, sericeous. Abdomen brown or dusky brown, clothed with yellow hairs; forceps testaceous-brown, the horny appendages black; ovipositor long and straight, ochreous or testaceous. Legs testaceous or light ochreous-brown, with a greyish reflection; tibiæ and tarsi more or less distinctly infuscated; the tibiæ of the fore legs in the male with a black slightly swollen ring just beyond base. Wings sub-hyaline; veins yellowish or brownish, with long brownish hairs which impart a greyish appearance to the wings; a small indistinct clouding at the great cross-vein and base of posterior branch of fourth longitudinal fork, also a second smaller one often observable at marginal cross-vein.

Hab.—Apparently generally distributed in N.S.W. (Masters and Skuse). Almost throughout the year.

330. Molophilus annulipes, sp.n.

♂.—Length of antennæ.....	0·055 inch	...	1·39 millimètres.
Expanse of wings.....	0·180 × 0·050	...	4·56 × 1·27
Size of body	0·150 × 0·025	...	3·81 × 0·62
♀.—Length of antennæ.....	0·055 inch	...	1·39 millimètres.
Expanse of wings.....	0·190 × 0·050	...	4·81 × 1·27
Size of body.....	0·150 × 0·025	...	3·81 × 0·62

Fulvous-yellow or more ochreous. Rostrum and palpi dark brown; antennæ brownish; basal joints usually ochreous; flagellar joints fusiform. Thorax somewhat hoary laterally in a certain

light, traversed by two sparse longitudinal rows of brown hairs; an ill-defined brownish stripe in the pleuræ from neck to base of wings (not visible in some specimens); pleuræ, metathorax and abdomen light reddish-brown in some specimens; horny appendages of male forceps black; ovipositor of female concolorous with rest of body. Halteres yellow. Legs yellow, sericeous. Femora with two brownish or black rings (generally darker in the male) on apical half; the tibiæ of the fore legs in the male with a black slightly swollen ring just beyond the base; tips of tibiæ and of tarsal joints a little infuscated. Wings pellucid, with a yellow tint; veins yellow with long yellow hairs; a peculiar, very small, cuneate black marking between the auxiliary and first longitudinal veins immediately beyond the humeral cross-vein.

Hab.—Sydney, Blue Mountains, and Hogan's Brush near Gosford, N.S.W.; August to January (Masters and Skuse).

Obs.—Thirteen specimens for comparison.

331. Molophilus flavonotatus, sp.n.

♂.—Length of antennæ.....	0·070 inch	...	1·77 millimètres.
Expanse of wings	0·180 × 0·047	...	4·56 × 1·18
Size of body.....	0·120 × 0·025	...	3·04 × 0·62

Head brown, tinged with yellow, with white pubescence; rostrum and palpi black; antennæ greyish, the basal joints ochreous; flagellar joints fusiform, with white verticils. Collare sulphur-yellow, somewhat tinged with brownish. Thorax rich brown, the humeral region and lateral borders sulphur-yellow; a spot on each side above the origin of wings, the scutellum, lateral borders of metanotum and origin of wings brownish-testaceous or ochreous. Halteres pale with sericeous white pubescence. Abdomen somewhat ochreous-brown, clothed with white hairs; forceps brownish-testaceous, the tips of the horny appendages black. Coxæ brownish-testaceous or ochreous. Remaining joints greyish, their tips a little infuscated; tibiæ of the fore legs with a slightly

swollen scarcely infuscated ring near the base. Wings almost hyaline; veins and hairs pale, the latter not dense but tolerably long; a small and rather indistinct linear brown marking between the auxiliary and first longitudinal veins, immediately beyond the humeral cross-vein.

Hab.—Sydney, September (Skuse).

332. Molophilus translucens, sp.n.

♂.—Length of antennæ.....	0·050 inch	...	1·27 millimètres.
Expanse of wings.....	0·150 × 0·047	...	3·81 × 1·18
Size of body.....	0·115 × 0·020	...	2·92 × 0·50
♀.—Length of antennæ.....	0·047 inch	...	1·18 millimètres.
Expanse of wings.....	0·150 × 0·047	...	3·81 × 1·18
Size of body.....	0·120 × 0·020	...	3·04 × 0·50

Entirely pale yellow or ochreous; the rostrum, palpi and two basal joints of antennæ sometimes brown or brownish; flagellar joints fusiform, with pale verticils. Body and legs distinctly haired in ♂; horny appendages of male forceps black; ovipositor rather short, curved, concolorous with rest of body. Wings hyaline or nearly so, with delicate opaline iridescence; veins pale, beset with long, very pale yellow, hairs.

Hab.—Lawson, Blue Mts. (Masters); Gosford and Hogan's Brush, Narrara Creek, N.S.W.; August to January (Skuse).

333. Molophilus canus, sp.n.

♂.—Length of antennæ.....	0·050 inch	...	1·27 millimètres.
Expanse of wings..... ..	0·190 × 0·042	...	4·81 × 1·06
Size of body.....	0·150 × 0·025	...	3·81 × 0·62

Head light brown, hoary, with white hairs; rostrum and palpi dark brown, antennæ brown, the basal joints more or less ochreous; flagellar joints fusiform, with white verticils. Thorax light greyish-brown, dull, with a very small transverse brown spot on each side

behind the humeri; pleuræ somewhat hoary; a small tuft of white hairs behind the origin of the wings; origin of wings ochreous-yellow. Halteres yellow. Abdomen brown, clothed with white hairs; forceps brownish-ochreous, the tips of horny appendages black. Coxæ ochreous. Remaining joints greyish, with a brownish tinge, somewhat sericeous, slightly infuscated towards their tips; tibiæ of the fore legs with an indistinct slightly swollen infuscated ring near their base. Wings almost hyaline; veins pale yellowish, rather sparingly beset with long pale hairs, imparting a pale greyish appearance to the wings.

Hab.—Sydney (Skuse). August and September.

334. Molophilus pulchripes, sp.n.

♂.—Length of antennæ.....	0·060 inch	... 1·54 millimètres.
Expanse of wings.....	0·160 × 0·050	... 4·06 × 1.27
Size of body.....	0·130 × 0·020	... 3·30 × 0·50

Head brown, bordered above the eyes with yellow; rostrum, palpi and antennæ brown; basal joints of antennæ yellowish; flagellar joints fusiform; collare yellow or yellowish. Thorax brown, dull, with two longitudinal rows of short brown hairs; humeri, lateral line to origin of wings, transverse suture, a small spot above the origin of wings, scutellum, and lateral borders of metanotum yellow or yellowish. Halteres yellow. Abdomen brown, clothed with yellow hairs; forceps brown, rather lighter than abdominal segments, the horny appendages black. Legs yellowish-brown; femora tipped with brown preceded by a broader ring of golden-yellow; genua yellow; tibiæ and joints of tarsi slightly infuscated at the tips; tibiæ of fore legs with a slightly swollen brown ring near the base. Wings almost hyaline; veins pale-yellowish, moderately clothed with brownish hair, imparting a greyish appearance to the wings; the hairs more dense, longer and perhaps darker, forming an oblique clouding, from tip of auxiliary vein to great cross-vein.

Hab.—Sydney (Skuse). September.

335. Molophilus pervagatus, sp.n.

♂.—Length of antennæ.....	0·050 inch	...	1·27 millimètres.
Expanse of wings.....	0·150 × 0·042	...	3·81 × 1·06
Size of body..... ..	0·120 × 0·020	...	3·04 × 0·50
♀.—Length of antennæ.....	0·042 inch	...	1·06 millimètres.
Expanse of wings.	0·150 × 0·042	...	3·81 × 1·06
Size of body.....	0·135 × 0·020	...	3·42 × 0·50

Head brown, sometimes bordered with yellow or yellowish; rostrum and palpi brown; antennæ brown; the first basal joint yellow; flagellar joints fusiform or sub-cylindrical. Collare yellowish. Thorax light brown, with an ochreous or sometimes a reddish tendency, dull, with two longitudinal rows of brown hairs; humeri and lateral line to origin of wings ochreous-yellow; pleuræ and metathorax dark brown; origin of wings yellowish. Halteres yellow. Abdomen dark brown, clothed with yellow hairs; male forceps and female ovipositor testaceous-brown. Legs ochreous, brownish-yellow or sometimes yellowish-grey, with a sericeous, almost golden-yellow reflection; femora with a brown ring at the tip; fore tibiæ of male with slightly swollen brown ring near the base. Wings hyaline or almost so; veins pale yellowish, clothed with long brownish hairs, imparting a grey appearance to the wings; the hairs, more dense, longer, rather darker, and forming a more or less distinct oblique clouding between the tip of auxiliary vein and great cross-vein, as in *M. pulchripes.*

Hab.—Generally distributed in N.S.W. (Masters and Skuse). Almost throughout the year.

Obs.—This is probably the most common of our species.

336. Molophilus lucidipennis, sp.n.

♂.—Length of antennæ.....	0·033 inch	...	0·84 millimètre
Expanse of wings..	0·150 × 0·042	...	3·81 × 1·06
Size of body.....	0·120 × 0·020	...	3·04 × 0·50

♀.—Length of antennæ.....	0·042 inch	...	1·06 millimètres.
Expanse of wings.....	0·150 × 0·042	...	3·81 × 1·06
Size of body.....	0·135 × 0·020	...	3·42 × 0·50

Brown. Thorax dull, with two longitudinal rows of brownish hairs. Halteres testaceous or brownish-ochreous. Abdomen clothed with golden-yellow hairs; anal forceps and female ovipositor testaceous or dull ochreous-brown. Legs light brown, testaceous or brownish-ochreous; tarsi somewhat infuscated with greyish; the tibiæ of fore legs in male with an indistinctly swollen brownish ring near their base. Wings hyaline; veins very pale yellowish, beset with long brownish-yellow hairs, imparting a uniform light greyish appearance to the wings.

Hab.—Lawson, Blue Mountains, N.S.W. (Masters). January.

337. Molophilus longicornis, sp.n.

♂.—Length of antennæ.....	0·120 inch	...	3·04 millimètres.
Expanse of wings.....	0.170 × 0·040	...	4·31 × 1·01
Size of body.....	0·115 × 0·020	...	2·92 × 0·50
♀.—Length of antennæ.....	0·065 inch	...	1·66 millimètres.
Expanse of wings.....	0·170 × 0·040	...	4·31 × 1·01
Size of body.....	0·130 × 0·020	...	3·30 × 0·50

Head, brownish, more or less tinged with yellow; rostrum and palpi brown; antennæ brown (the basal joints in male yellow), in the male the length of body, in female about half the length; flagellar joints cylindrical, with short pedicels; with long verticils in male. Thorax light, somewhat reddish-brown, levigate, with a more or less distinct median ochreous-yellow stripe extending from collare to posterior border of metanotum; the anterior portion of stripe, and also that traversing the metanotum, narrow, the rest as broad as scutellum; sternum and coxæ ochreous-yellow. Halteres brown, the extreme base of stem yellowish. Abdomen brown, clothed with yellow or brownish hairs; genitalia brownish-ochreous

or testaceous. Legs ochreous-yellow; the terminal joints of tarsi almost imperceptibly infuscated. Wings almost hyaline (when denuded); veins brownish, densely beset with long brown hairs.

Hab.—Berowra, N.S.W. (Masters); Knapsack Gully, Blue Mountains, N.S.W. (Skuse). August.

Obs.—One specimen only was captured in each locality. The specimens appear undoubtedly the two sexes of the same species.

Genus 13. Tasiocera, gen.nov.

Two sub-marginal cells; four posterior cells; discal cell present or absent. Wings very cuneiformly narrowed towards the base, *pubescent along the veins only*. Second longitudinal vein originates at an acute angle some distance before the middle of the anterior margin; sub-costal cross-vein very indistinct or none; *præfurca ends in the second sub-marginal cell*, which is longer than the first; inner end of discal cell, and great cross-vein, not in one line with the small cross-vein but much nearer to root of the wing (as in *Molophilus*). *Seventh longitudinal vein very short.* Antennæ 16-jointed, *about twice the length of the entire body*. Tibiæ without spurs at the tip; ungues smooth on the under side; empodia distinct. Male forceps very hairy at the apex of the fleshy lobe, terminated with horny appendages, toothed at the extremity (Pl. xxiv., fig. 55).

The rostrum and palpi short. The antennæ with one or more very long cylindrical joints at the base of flagellum, the remainder becoming more flasked-shaped, the terminal joint very small, more or less ovate; adorned with long verticillate hairs. The two joints of the scapus are small, globose, or more cupuliform, equal in size. In *T. gracilicornis* (Pl. xxiv., fig. 56) the flagellar joints more quickly begin to appear flask-shaped, only the first joint being cylindrical; on this account the antennæ are shorter than those of *T. tenuicornis*. The first cylindrical joints and the basal portions of all the following joints are about equal in width; if anything, the flask-shaped joints are slightly broader at their widest part

than the thickness of the cylindrical ones. The verticils are not stiff, but appear slightly crimpled. Legs long and very slender (in *T. gracilicornis* two and a-half times the length of the wings); the intermediate pair very little shorter than the other pairs.

Wings narrow, very cuneiformly so towards their base, fringed with long cilia on the posterior border; the hairs on the veins long enough to reach from vein to vein, causing the wings to appear very hairy. Auxiliary vein very short in *T. tenuicornis*, extending only to opposite the middle of the præfurca; while in *T. gracilicornis* it reaches beyond the marginal cross-vein; in both cases it seems to eventually amalgamate with and form a thickening of the costa. The sub-costal cross-vein seems entirely wanting; I could not detect it in wings denuded of hair and mounted in balsam. The discal cell when open coalesces with the third posterior cell, that is, the anterior branch of the fourth longitudinal vein is forked. The first bifurcation of the fourth longitudinal vein begins considerably before the small cross-vein, as in *Molophilus*. Second sub-marginal and first posterior cells about equal in length, their bases situated about as much before the inner end of first sub-marginal as that of the discal (or third posterior) cell is before theirs. The seventh longitudinal vein is straight and short, and runs close to the margin; in *T. tenuicornis* it so short that it ceases opposite the origin of the fourth longitudinal vein.

This genus seems intermediate between *Molophilus* and *Erioptera*, but differs from both especially by the antennæ. I have not seen any female examples, which may possible possess short antennæ.

338. Tasiocera tenuicornis, sp.n. (Pl. xxi., fig. 13).

♂.—Length of antennæ.....	0·210 inch	...	5·33 millimètres.
Expanse of wings..	0·140 × 0·033	...	3·55 × 0·84
Size of body.....	0·110 × 0·016	...	2·79 × 0·40

Head, including palpi, rostrum and antennæ brown; palpi and joints of scapus sometimes pale brown, or greyish-ochreous; first four flagellar joints cylindrical, the first very long and twice the

length of the fourth ; fifth to ninth joints rather rapidly diminishing in length and becoming more flask-shaped, terminal joint very small, shortly-ovate ; all flagellar joints with long, fine, verticillate hairs, which in the flask-shaped joints are confined to their broad basal portion. Thorax brown, almost opaque ; pleuræ, scutellum and metanotum sometimes lighter brown or greyish-testaceous. Halteres light brownish-grey. Abdomen brown, clothed with brown hairs ; genitalia testaceous, densely haired. Legs sooty-brown, with a greyish-brown reflection in a certain light, the coxæ and base of femora greyish-testaceous or pale brown. Wings hyaline, the hairs along the veins long, brown ; veins pale ; cilia along the posterior margin very long. Auxiliary vein short, terminating in costa opposite middle of præfurca ; marginal cross-vein pale, situated near base of first sub-marginal cell ; base of latter situated beyond that of second sub-marginal a distance rather greater than length of great cross-vein ; anterior branch of fourth longitudinal vein originating before inner end of first posterior cell a distance equal to once and a-half to twice the length of great cross vein ; discal cell present (it is apparently the posterior branch which is forked, about the middle of its length) ; great cross-vein before, at, or beyond inner end of discal cell ; sixth longitudinal vein a little arcuated at tip ; seventh longitudinal vein very short, reaching posterior margin opposite origin of fourth longitudinal vein.

Hab.—Sydney and Woronora, N.S.W. (Masters and Skuse). Six specimens.

339. Tasiocera gracilicornis, sp.n.

♂.—Length of antennæ.....	0·165 inch	...	4·18 millimètres.
Expanse of wings.....	0·150 × 0·035	...	3·81 × 0·88
Size of body.....	0·100 × 0·016	...	2·54 × 0·40

Head, including palpi, rostrum and antennæ, brown, the basal joints of latter, also palpi and rostrum, sometimes more ochreous ; first flagellar joint cylindrical, slightly narrowed at the apex, very

long, nearly three times the length of the second joint; following joints rapidly diminishing in length and becoming more perfectly flask-shaped, the terminal joints very small, ovate; all the flagellar joints with long fine verticillate hairs except on their narrowed anterior portion (Pl. XXIV., fig. 56). Thorax brown, very slightly shining; pleuræ and pectus sometimes paler. Halteres light brownish-grey, the base of stem ochreous. Abdomen dusky brown, clothed with brown hairs; genitalia testaceous-brown or darker, densely haired. Legs longer than in *P. tenuicornis*, sooty brown, greyish-brown when viewed in a certain light; the coxæ and extreme base of femora pale brown. Wings hyaline, the hairs along the veins long and brown; veins pale; cilia along the posterior margin very long. Auxiliary vein reaching the costa a short distance beyond marginal cross-vein; the latter near base of first sub-marginal cell; base of first sub-marginal cell obtuse, situated beyond that of the second sub-marginal a distance almost equal to length of great cross-vein; anterior branch of fourth longitudinal vein originating before the inner end of first posterior cell a distance equal to about twice the length of great cross-vein, forked considerably before its middle; discal cell usually open,* coalescent with the third posterior cell; great cross-vein opposite or a little beyond base of third posterior cell; sixth longitudinal vein arcuated at the tip; seventh straight, terminating in posterior margin opposite origin of præfurca.

Hab.—Sydney and Berowra, N.S.W. Five specimens (Masters and Skuse).

Obs.—Readily distinguished from the last by the character of the antennal joints.

Genus 14. Erioptera, Meigen,

Erioptera, Meig., Ill. Mag. II. p. 262, 1803; Syst. Beschr. I. p. 108, 1818; Macquart, S. à B. I. p. 109, 1834; Zetterstedt, F. Lapp. 1840; Dipt. Scand. X., 1851; Walker, Ins. Brit. III.,

* I have found it closed in only one specimen.

p. 273, 1856 ; Schiner, F. A. Dipt. II., 1864 ; O.-Sacken, Proc. Acad. Nat. Sc. Philad. p. 225, 1859 ; Mon. Dipt. N. Amer. IV. p. 146, 1869 ; Studies, II. p. 193, 1887.

"Two sub-marginal cells ; four posterior cells ; discal cell present or absent. *Wings pubescent along the veins only.* The second longitudinal vein usually originates at a very acute angle, some distance before the middle of the anterior margin ; the sub-costal cross-vein is at a considerable distance (two or three lengths of the great cross-vein, or more) from the tip of the auxiliary vein ; the præfurca ends in the second sub-marginal cell, which is longer than the first. Antennæ 16-jointed. Tibiæ without spurs at the tip ; ungues smooth on the underside ; empodia distinct." (Osten-Sacken).

Sub-genus Erioptera, O.-Sacken.

A. The "præfurca ends in the second sub-marginal cell, which is longer than the first ; the inner end of the discal cell (or, when it is open, of the cell with which it coalesces) is on the same line with the small cross-vein.

1. The *posterior* branch of the fourth longitudinal vein is forked (in other words, when the discal cell is open, it coalesces with the *second* posterior cell ; when it is closed, the inner end of the third posterior cell is nearer the basis of the wing than the inner end of the second).

   a. The seventh longitudinal vein is arcuated (converging towards the sixth) in such a manner, that the auxiliary cell is broader in the middle than near the margin of the wing." (Osten-Sacken).

340. Erioptera ochracea, sp.n.

♂.—Length of antennæ ...	0·030 inch ...	0.76 millimètres.
Expanse of wings.....	0·170 × 0·042 ...	4·31 × 1·06
Size of body	0·135 × 0·020 ...	3·42 × 0·50

♀.—Length of antennæ.....	0·037 inch	...	0·90 millimètres.
Expanse of wings	0·170 × 0·042	...	4·31 × 1·06
Size of body.....	0·145 × 0·020	...	3.66 × 0·50

Dull brownish ochre-yellow. Palpi and antennæ sometimes brownish. Thorax opaque, sometimes with a very indistinct narrow median brownish stripe; two lateral longitudinal rows of short brown hairs. Halteres with a somewhat infuscated club. Abdomen dull, clothed with yellow hairs; superior segments more or less tinged with brown, with a narrow pale border posteriorly. Terminal joints of tarsi somewhat infuscated. Wings hyaline, microscopically granulose; veins ochreous-brown, the pubescence very short. Auxiliary veins reaching costa at a point a little before marginal cross-vein; discal cell open.

Hab.—Generally distributed in N.S.W. (Masters and Skuse). Almost throughout the year.

Obs.—The above-described answers in every particular to the characters of the sub-genus *Erioptera* as defined by Baron Osten-Sacken. It is the only Australian example as yet known to me.

Genus 15. Trimicra, O.-Sacken.

Trimicra, O.-Sacken, Proc. Ac. Nat. Sc. Philad. 1861, p. 290; Mon. Dipt. N. Amer. IV. p. 165, pl. II. fig. 1, 1869; Studies, II. p. 195, 1887.

"Two sub-marginal cells; four posterior cells; a discal cell; the second longitudinal vein originates at a more or less acute angle before the middle of the length of the wing and a considerable distance (more than the breadth of the wing) before the tip of the auxiliary vein; the sub-costal cross-vein is at a considerable distance (three lengths of the great cross-vein, or more) from the tip of the auxiliary vein; seventh longitudinal vein straight. Wings and their veins glabrous. Antennæ 16-jointed; *three last joints of the flagellum abruptly smaller.* Tibiæ without spurs at tip; ungues small, smooth on the underside, inserted under a projection of the last tarsal joint; empodia small,

but distinct. Forceps of the male with large, incrassated basal pieces, and a double claw-shaped horny appendage fastened to them on each side; ovipositor with flattened, curved, pointed upper valves and short lower ones." (Osten-Sacken).

341. Trimicra hirtipes, Walker.

Limnobia hirtipes (♂), Wlk., List Dipt. Brit. Mus. I. p. 50, 1848; *Trimicra Sydneyensis* (♀), Schiner, "Novara" Exp. Dipt. p. 43, 1868; *Trimicra hirtipes*, O.-Sacken, Mon. Dipt. N. Amer. IV. p. 167, 1869.

♂.—Length of antennæ.....	0·085 inch	...	2·14 millimètres.
Expanse of wings.....	0·300 × 0·090	...	7·62 × 2·27
Size of body.....	0·250 × 0·050	...	6·34 × 1·27
♀.—Length of antennæ.....	0·060 inch	...	1·54 millimètres.
Expanse of wings.....	0·300 × 0·090	...	7·62 × 2·27
Size of body.....	0·260 × 0·050	...	6·62 × 1·27

Head covered with a greyish or yellowish-grey bloom, traversed on the front by black median line; rostrum, palpi and antennæ brown or black, basal joints of latter testaceous or brownish-ochreous. Thorax covered with a yellowish-grey bloom, with three brown or blackish stripes; intermediate one somewhat shining anteriorly, interrupted immediately before suture, but extending beyond it posteriorly; lateral ones short, not so distinct, but also extending beyond suture; humeral pits and suture black; humeri yellowish; pleuræ more or less ochreous, hoary, with two brown or blackish stripes, one from base of fore coxæ to root of halteres, the other above the intermediate and hind coxæ; scutellum ochreous, tinged with brown; metanotum sooty brown, hoary. Halteres infuscated, the stem more or less yellowish. Abdomen deep fuscous brown or black, shining, with yellowish hairs (more dense in ♂); lateral and posterior borders of segments with a narrow margin of ochreous or brownish-ochreous; genitalia brownish-ochreous. Legs testaceous; in ♂ densely clothed with

long, semi-erect blackish hairs; in ♀ with inconspicuous decumbent hairs; femora with a broad ring of brown or blackish immediately before tip; tibiæ brown or blackish at tip; tarsi deep brown or black. Wings slightly tinged with brownish; veins brown or blackish; tip of first longitudinal vein, the marginal cross-vein, præfurca, bases of sub-marginal cells, and fifth longitudinal vein often distinctly infuscated; stigma pale brownish. Auxiliary vein reaching costa before, opposite, or beyond marginal cross-vein; marginal cross-vein a little beyond inner end of first sub-marginal cell; discal cell often with a short stump of a vein from lower basal angle of second posterior cell; great cross-vein situated a little before inner end of discal cell.

Hab.—Swan River, W. Australia (Walker); Adelaide S. Australia (J. G. O. Tepper), *Coll. S. Aust. Museum*; Sydney, &c., N.S.W. (Masters and Skuse). Extremely abundant during August, September, and October.

Obs.—Schiner's *T. Sydneyensis* is certainly the female of Walker's species. Some specimens before me are larger than the above measurements, others are less than two-thirds the size. I can see very little other variation apart from sexual differences. More than one hundred specimens before me for comparison.

342. Trimicra microcephala, Thomson.

Limnobia microcephala, Thomson, "Eugenia" Exp. Dipt. p. 446, 1868.

♂.—Length of antennæ.....	0·055 inch	...	1·39 millimètres.
Expanse of wings.....	0·250 × 0·060	...	6·34 × 1·54
Size of body.....	0·180 × 0·025	...	4·56 × 0·62
♀.—Length of antennæ.....	0·050 inch	...	1·27 millimètres.
Expanse of wings.....	0·250 × 0·060	...	6·34 × 1·54
Size of body.....	0·220 × 0·025	...	5·58 × 0·62

Remarkably like the preceding in colouring and markings, but smaller. Legs of both sexes inconspicuously clothed with short

hairs; obscure testaceous; femora gradually darkening into deep brown or blackish towards the tip; extreme tip of tibiæ and the tarsi deep brown or blackish. Wings sub-hyaline, very slightly tinged; veins brown or blackish; cross-veins sometimes scarcely perceptibly infuscated; stigma pale brownish. The discal cell in certain specimens shows a tendency to open posteriorly; the anterior branch of fourth longitudinal vein in some instances originating with a short arcuation, and the discal cell closed with a pale cross-vein.

Hab.—Sydney; abundant during August, September and October (Masters and Skuse).

Obs.—Thomson's species, which is certainly not a *Limnobia* on account of its 16-jointed antennæ, nor a *Limnophila* because of its spurless tibiæ, seems undoubtedly to be identical with the smaller of our two common Sydney *Trimicræ*.

Genus 16. Gnophomyia, O.-Sacken.

Gnophomyia, O. Sack., Proc. Acad. N. Sc. Philad. p. 223, 1859; Mon. Dipt. N. Amer. IV. p. 172, t. 2. f. 5 (wing), t. 4. figs. 19 and 19a (forceps and ovipositor), 1869; Studies II. p. 198, 1887.

"Two sub-marginal cells; four posterior cells; a discal cell; the second longitudinal vein originates somewhat before the middle of the anterior margin, a considerable distance anterior to the tip of the auxiliary vein; præfurca very slightly arcuated at the basis, nearly straight; sub-costal cross-vein at a small or moderate distance (hardly exceeding the length of the great cross-vein) from the tip of the auxiliary vein; seventh longitudinal vein nearly straight. Wings glabrous. Antennæ 16-jointed. Tibiæ without spurs at the tip; tarsi with distinct empodia. The forceps of the male consists of two comparatively short basal pieces, and a pair of claw-shaped horny appendages; a second pair of horny appendages, below the first, is shorter and stouter." (Osten-Sacken).

343. Gnophomyia fascipennis, Thomson. (Pl. xxi., fig. 14). ♀ wing).

Limnobia fascipennis (♀), Thoms., "Eugenia" Exp. Dipt. p. 447, 1868; *Gnophomyia cordialis* (♂), O.-Sacken, Studies on Tipulidæ, II. p. 199, 1887.

♂.—Length of antennæ.....	0·065 inch	...	1·66 millimètres.
Expanse of wings.....	0·230 × 0·060	...	5·84 × 1·54
Size of body.....	0·240 × 0·040	...	6·09 × 1·01
♀.—Length of antennæ	0·065 inch	...	1·66 millimètres.
Expanse of wings.....	0·230 × 0·060	...	5·84 × 1·54
Size of body.....	0·280 × 0·040	...	7·10 × 1·01

♂ and ♀.—Head black above, yellowish beneath; rostrum somewhat prolonged, in ♂ yellow or reddish-yellow, in ♀ reddish-brown or even black; palpi brown or black; antennæ brown or black in ♂, first joint of scapus at apex and basal half of second usually tinged with reddish-yellow or brownish, in ♀ both joints, except tip of second, yellow or reddish-yellow, the first joint often brownish above. Thorax reddish-yellow or yellowish-ferruginous, nitidous; a deep black spot on the mesonotum, usually larger and more pyriform in ♀, generally squarish in ♂; two lateral deep black stripes from below humeri to scutellum (rarely confluent anteriorly with the first spot), emitting a short branch in front of root of wings; metanotum with a large black truncate-cordiform spot (in one ♂ specimen the spot is absent, whilst in a ♀ the metathorax is entirely deep brown, or black). Halteres yellowish, with infuscated club. Abdomen in ♂ (including genitalia) reddish-yellow or yellowish-ferruginous, in ♀ superior segments deep and shining bluish or violaceous-black; the venter and ovipositor as in ♂. Legs pale brownish- or reddish-yellow, tips of femora and tibiæ usually brownish; tarsi more or less deeply infuscated. Wings in ♂ with a brownish tint, usually with two, often with three and sometimes without sub-hyaline spots, the first very

small before origin of second longitudinal vein, second larger, ill-defined, preceding the cross-veins, third a narrow shortened cross-band from tip of second longitudinal vein; in ♀ fuscous, with a distinct spot and two fasciæ situated as in ♂, the latter stretching almost across the wing, anal angle more or less sub-hyaline; stigma not noticeable; veins dark. Auxiliary vein reaching costa about midway between origin of second longitudinal and marginal cross-vein; sub-costal cross-vein situated before its tip a distance $\frac{1}{3}$ longer than great cross-vein; præfurca straight, very slightly arcuated at base; marginal cross-vein at or a little beyond inner end of sub-marginal cell, sometimes not far from tip of first longitudinal; petiole of first sub-marginal cell about length of distance between tip of præfurca and small cross-vein; cross-vein closing inner end of discal cell usually almost obliterated; great cross-vein situated more or less beyond inner end of discal cell.

Hab.—Australia (Lotz., 1834, Vienna Mus.); Sydney (Eugenia Exp.); several localities in N.S.W. (Masters and Skuse). September to January. Twenty-five male and twelve female specimens are before me.

Obs—I had already referred Thomson's species to *Gnophomyia* when I discovered that Baron O.-Sacken had described the ♂ as another species under this generic title. The Baron also describes in the same paper (Studies II. p. 199), a species of *Gnophomyia* from Amazon River which he calls *fascipennis*, but this name being pre-occupied I would suggest that *Osten-Sackeni* be substituted in honour of the describer.

Genus 17. Gonomyia, Megerle.

Gonomyia, Meg., in litt., Meigen, Syst. Beschr. I. p. 146, 1818; *Taphrosia*, Rondani, Prodr. I. 1856; *Gonomyia*, O.-Sacken, Proc. Acad. Nat. Sc. Philad. III. p. 229, 1859; *Goniomyia* (amended name), O.-Sack., Mon. Dipt. N. Amer. IV. p. 176, pl. II. figs. 2

and 4 (wings), pl. IV. fig. 17 (genitalia), 1869; *Gonomyia*, O.-Sack., Studies, II. p. 200, 1887.

"One or two sub-marginal cells; the *first*, when present, *very short*, *sub-triangular*, owing to the shortness and the oblique direction of the anterior branch of the second longitudinal vein; no marginal cross-vein; four posterior cells; discal cell open or closed; when open it is coalescent with the *third* posterior cell;* wings glabrous. Antennæ 16-jointed, rather short. Feet long, slender; tibiæ without spurs at the tip; tarsi with distinct empodia. Forceps of the male with several branches and linear appendages. Ovipositor of the female slender, arcuated," (Osten-Sacken).

I cannot do otherwise than place the following species in this genus, though it seems to deviate in certain particulars from the normal type of *Gonomyia*; chiefly in the great length of the auxiliary vein, the structure of the discal cell and situation of the great cross-vein (which reminds one of *Gnophomyia*), and lastly in the uniform dull dark colouring of the body and legs, instead of the usually yellow colour. I regret that I have not seen a male specimen, in order to compare the structure of the forceps. This species cannot be well included in any of the five sections of the genus which have been recently defined by Baron O.-Sacken (Studies, II. pp. 201-202).

344. Gonomyia leucophæa, sp.n.

♀.—Length of antennæ.....	0·047 inch	...	1·18 millimètres.
Expanse of wings.....	0·320 × 0·070	...	8·12 × 1·77
Size of body	0·260 × 0·030	...	6·62 × 0·76

* With merely individual exceptions, according to Baron O.-Sacken. But in the species now described, it is unmistakably the posterior branch of the fourth vein which is forked, so that in specimens with the discal cell open, the latter would be coalescent with the second posterior cell.

Cinereous, opaque. Rostrum, palpi and antennæ black ; joints of flagellum elliptical, with very short hairs. Thorax with two longitudinal rows of very short yellowish hairs. Halteres with an ochreous stem and dusky brown club. Abdomen very sparingly pubescent ; ovipositor shining brown, the lower valves ochraceous. Coxæ pale greyish-ochreous, the fore pair more cinereous. Remainder of joints sooty brown, their pubescence with a greyish reflection ; base of femora slightly testaceous-brown. Ungues smooth ; empodia distinct. Wings slightly greyish, greyish-ochreous at their origin ; stigma very pale brownish-grey ; veins sooty-brown. Auxiliary vein very long, reaching costa some distance beyond inner end of second sub-marginal cell and opposite the tip of fifth longitudinal vein ; sub-costal cross-vein situated a short distance before its tip, equal to the length of great cross-vein ; præfurca strongly arcuated at its origin ; petiole of first sub-marginal cell forming an obtuse angle with præfurca at the small cross-vein, about equal in length to posterior branch of its fork ; the distance between the tip of the first longitudinal and that of the anterior branch of the second longitudinal equal to the distance between both tips of the latter fork ; inner end of second sub-marginal cell pointed (there is a distinct incrassation at this point) opposite inner end of first posterior cell ; third longitudinal vein almost straight, slightly thicker than the neighbouring veins ; discal cell elongated, its arcuated inner end situated considerably before the inner end of first posterior cell, the cross-vein closing its outer end situated opposite a point mid-way between the tip of the posterior branch of fourth longitudinal and tip of fifth longitudinal ; the *posterior branch* of fourth longitudinal vein *forked*, the branch originating at a gentle arcuation opposite tip of fifth longitudinal vein ; great cross-vein some distance beyond inner end of discal cell.

Hab.—Sydney ; September (Skuse).

Obs.—Described from a single specimen.

Genus 18. Rhabdomastix, gen.nov.

Two submarginal cells, the first half the length of the second; four posterior cells; no marginal cross-vein; præfurca long, originating at an acute angle before the middle of the wing; discal cell small; wings glabrous. Antennæ 16-jointed, *very long, filiform, nearly twice the length of the entire body.* Legs long, slender, tibiæ without spurs at the tip; ungues small, smooth; empodia indistinct. Male forceps with an outer, straight, slender, horny appendage, microscopically serrated on the outer side, and an inner short, soft, elliptical one; also two long, slender, somewhat hooked, internal appendages (Pl. xxiv., fig. 57).

Rostrum and palpi short; antennæ very long; joints of the scapus equal in size, very small, globose; flagellar joints long, slender, cylindrical, evenly but not densely pilose, somewhat decreasing in length; last joint apparently terminated by a minute nipple-shaped projection. Front broad, convex; eyes glabrous, small, round, considerably separated on the under side. Collare short; suture of thorax very distinct. Halteres long, slender. Legs densely clothed with a minute pubescence. Wings very cuneiformly narrowed towards the base, with only a slight indication of an anal angle; glabrous, appearing as if covered with microscopic dots under a high power; veins glabrous, or almost so; stigma wanting. The tip of the auxiliary vein is some distance beyond the origin of the second longitudinal vein; the subcostal cross-vein wanting or only extremely indistinctly present at the tip of auxiliary vein; præfurca originating in a rather acute angle considerably before the middle of the wing; first longitudinal vein joining costa opposite distal end of discal cell; the anterior branch of the second longitudinal vein is short, shorter than the great cross-vein; petiole about one half the length of first sub-marginal cell; marginal cross-vein entirely wanting; inner ends of second sub-marginal, first posterior and discal cells in one line; small or anterior cross-vein as long or somewhat longer than the great cross-vein, almost as long as the discal cell; discal cell small,

hexagonal, longer than wide; the great cross-vein situated at or beyond the middle of its length; fifth, sixth and seventh longitudinal veins gently arcuated; the last short, scarcely reaching to one-third the length of the wing.

345. Rhabdomastix Osten-Sackeni, sp.n. (Pl. xxii., fig. 15).

♂.—Length of antennæ.....	0·250 inch	...	6·34 millimètres.
Expanse of wings.....	0·180 × 0·040	...	4·56 × 1·01
Size of body.....	0·145 × 0·020	...	3·66 × 0·50

Front dull brown; rostrum brownish or ochreous-brown; palpi and antennæ brown, the latter nearly twice the length of the body. Thorax dull brown, the scutellum sometimes more ochreous-brown. Halteres long and slender, brownish. Abdomen brown, clothed with short brownish hairs; forceps brownish-ochreous. Legs brown or ochreous-brown, with a light sericeous reflection in a certain light; the tarsi white. Wings pellucid, almost hyaline, glabrous, granulate on account of being covered with microscopic dots which represent rudimentary pubescence; margaritaceous reflections; veins greyish-brown. Auxiliary vein reaching costa at a point not quite half the distance from origin of second longitudinal vein to inner end of second sub-marginal cell; præfurca almost imperceptibly bent at its origin, almost straight, nearly equal in length to the remainder of the second longitudinal; the third longitudinal and following veins at apex of wing all gently arcuated posteriorly.

Hab.—Berowra, N.S.W. Three specimens in August (Masters and Skuse).

Obs.—I have named this species in honour of Baron Osten-Sacken, who has so greatly advanced Dipterology; especially by his unsurpassed knowledge of, and excellent publications, on Tipulidæ.

Genus 19. Lechria, gen.nov.

Two sub-marginal cells, the first very short, sub-triangular; four posterior cells; *no marginal cross-vein*, but *inner marginal cell closed by first longitudinal vein*, which ends at inner end of first sub-marginal cell; *small cross-vein* situated some distance *before inner end of second sub-marginal cell;* præfurca originating beyond the middle of the wing; discal cell closed, elongated, its inner half cuneate, and *its inner end situated before origin of præfurca;* wings glabrous. Antennæ 16-jointed, short. Feet long, slender; tibiæ with spurs; ungues small, smooth; empodia indistinct. Male forceps with two horny appendages; an outer linear one, and a longer somewhat hooked inner appendage; also five long, horny, needle-like processes of the internal apparatus (Pl. xxiv., fig. 58).

Rostrum nearly half the length of the head; palpi of moderate length, the first joint apparently slightly the longest, the last three rather thicker, equal. The antennæ little longer (if any) than the head; joints of scapus somewhat thick, sub-cylindrical, the first rather longer than the second; flagellar joints sub-cylindrical, with very short hairs. Eyes contiguous above, and almost so on the under side. Collare inconspicuous. Legs clothed with only a microscopic pubescence. Wings very cuneiformly narrowed towards the base, with only a slight anal angle; appearing covered with microscopic dots only under a high power; the veins at apical end of wings densely beset with minute hairs; stigma narrow, elongate, enveloping terminal portion of first longitudinal vein. The tip of auxiliary vein is opposite the end of præfurca and the small cross-vein; the sub-costal cross-vein at its tip; præfurca very short, originating at an angle; the first longitudinal gently arcuated into the second longitudinal, joining at the base of its fork; the first sub-marginal cell is very short; the anterior branch of the second longitudinal fork about half the length of the posterior, the latter converges towards the tip of the third longitudinal, and is equal in length to the petiole; second sub-marginal cell also with a short petiole; the small cross-vein situated a little

beyond middle of discal cell; the latter closed, elongated, its inner half cuneiformly narrowed, and its inner end a little before the origin of præfurca; the great cross-vein a short distance beyond inner end of discal cell; fourth longitudinal vein originating in fifth longitudinal at a little before one third the length of the wing, joined at its base to first longitudinal by a short cross-vein; fifth, sixth and seventh longitudinal veins straight.

The most striking peculiarities in the venation are, the course of the first longitudinal which terminates in the second, the absence of the marginal cross-vein, the first and second sub-marginal cells being both petiolate, the position of the small cross-vein, and lastly the shape and position of the discal cell.

This genus seems undoubtedly related to *Gonomyia*.

346. Lechria singularis, sp.n. (Pl. xxii., fig. 16).

♂.—Length of antennæ.. ...	0·040 inch ...	1·01 millimètres.
Expanse of wings.....	0·210 × 0·057 ...	5·33 × 1·44
Size of body.....	0·180 × 0·033 ...	4.56 × 0·84

Head blackish or sooty brown. Rostrum, palpi and antennæ dark brown. Thorax brown, opaque, with a yellowish-grey bloom in a certain light. Halteres yellow, with slightly infuscated club. Abdomen brown, the venter more ochreous; forceps yellow. Legs dull ochre-yellow, the tips of the femora and the last three joints of tarsi infuscated. Wings hyaline, appearing covered with microscopic dots only under a high power; stigma long, narrow, brownish; veins brown. The venation as described in the particulars of generic characters.

Hab.—Wheeny Creek, Hawkesbury District. One specimen in January (Skuse).

Genus 20. Trentepohlia, Bigot.

Trentepohlia, Bigot, Ann. Soc. Ent. Fr. (3rd ser.) II., p. 473, 1854; *Mongoma*, Westwood, Trans. Ent. Soc. Lond. 1881, p. 364,

pl. xvii., fig. 1; O.-Sacken, Berl. Ent. Zeits. XXVI., p. 89, 1882; Studies, II., p. 203, 1887; *Trentepohlia*, Bergroth, Ent. Tidsk. 1888, p. 136, fig. 3 (wing).

Two sub-marginal cells; the first very short; second in immediate contact with the discal cell, consequently the small cross-vein is wanting; marginal cross-vein situated before the inner end of the first sub-marginal cell; discal cell open or closed; three or four posterior cells; anal cell closed; auxiliary vein reaching costa usually a very short distance before the tip of the first longitudinal vein. Antennæ 16-jointed. Tibiæ without spurs; tarsi without empodia.

I do not know sufficient about the species having only three posterior cells to criticise the above synonymy, but accept them as congeneric with those possessing four, on the authority of Dr. Bergroth. Baron Osten-Sacken has more than once suggested the relationship of *Limnobia Trentepohli*, Wied., and *Cylindrotoma albitarsis*, Dolesch., with Westwood's *Mongoma*, but the descriptions appear too incomplete to satisfactorily decide. In the above diagnosis I have combined the principal characters of the two sections.

In the species now described the tips of the auxiliary and first longitudinal veins join the costa at rather widely separate points (which also seems to be the case with *T. exornata*, Bergr.), thus differing from *T. fragillima*, Westw., and *T. tenera* and *pennipes*, O.-Sack., in which they terminate close together. (Pl. xxiv., fig. 59, forceps).

Two specimens in the Macleay collection, from Fiji Islands, are possibly distinct from *T. australasiæ*, but at any rate belong to a closely allied species. The auxiliary and first longitudinal veins are separated as in the Australian example; the præfurca is rather more than twice the length of the distance between the origin of the third longitudinal vein and the inner end of the discal cell;

the cross-vein closing the discal cell is situated, in one specimen at, in the other somewhat before, the base of the anterior fork. All have the base of the third posterior cell before that of the second posterior cell. The Fijian form has considerably longer legs (42 mm.); the white on the knees extends equally (2 mm.) on the femora and tibiæ; the apical third of the tibiæ is white; and the extreme base and rather more than the apical half of the metatarsus, with the remainder of the tarsal joints, white; also, the wings are longer than in *T. australasiæ*.

TABULATION OF HITHERTO DESCRIBED SPECIES.*

A. Posterior branch of the fourth longitudinal vein forked. Four posterior cells. Discal cell closed.

a. Tips of the auxiliary and first longitudinal veins in close proximity. Tarsi entirely white.

* Intermediate tibiæ with a short fringe of white hair on each side at the apex.

pennipes, O.-Sack. Studies II., p. 204. Borneo.

**Intermediate tibiæ simple. Tibiæ entirely white.

tenera, O.-Sack., Berl. Ent. Zeits., XXVI., p. 89. Phillippine Is.

Tibiæ fuscous, white at the base and apex.

fragillima, Westw., Trans. E. Soc. Lond. 1881, p. 364. Africa.

b. Tips of the auxiliary vein and first longitudinal veins considerably remote. Tarsi brown towards the base.

australasiæ, sp.n.

B. Posterior branch of the fourth longitudinal vein simple. Three posterior cells.

a. Discal cell open. Tarsi fuscous.

* Based upon that of Dr. Bergroth (Ent. Tidsk., 1888, p. 136).

* Abdomen yellow, brownish-black at apex. Wings fuscous at apex.

Trentepohli, Wied., I. p. 551. Sumatra.

** Abdomen entirely fuscous-black. Wings with the apex and a middle transverse fascia of fuscous.

exornata, Bergr. Ent. Tidsk., 1881, p. 135. Africa.

b. Discal cell closed. Tarsi white.

albitarsis, Dolesch., II., Bijdr., p. 15. Java.

347. TRENTEPOHLIA AUSTRALASIÆ, sp.n. (Pl. XXII., fig. 17).

♂.—Length of antennæ.....	— inches ...	— millimètres.
Expanse of wings.....	0·250 × 0·055 ...	6·34 × 1·39
Size of body.....	0·220 × 0·030 ...	5·58 × 0·76

In the single specimen before me the head is wanting, and the thorax has been almost entirely destroyed by the pin. Thorax apparently ochreous. Halteres ochreous. Abdomen umber-brown, the first two or three segments ochreous beneath. Legs about 35 mm. in length. Coxæ ochreous. Femora and tibiæ brown; the femora white at apex (about 1 mm.), and the tibiæ very slightly white at base and considerably tipped (about 3 mm.) at apex. Tarsi yellowish, the basal half of the metatarsus deepening into brown. Wings sub-hyaline, tinted with brownish between the auxiliary and first longitudinal veins for the whole of their length; beautiful violaceous and cupreous reflections; veins dark brown. Auxiliary veins reaching costa opposite anterior extremity of marginal cross-vein, and separated a distance equal to the length of the latter from tip of first longitudinal vein; sub-costal cross-vein situated some distance before tip of auxiliary vein, and opposite posterior extremity of great cross-vein; first longitudinal vein extending beyond marginal cross-vein a distance equal to the length of latter; second longitudinal originating at $\frac{1}{3}$ the length of wing; præfurca a little longer than distance between origin of

third longitudinal vein and inner end of discal cell; great cross-vein situated a little before inner end of discal cell.

Hab.—Barron River, Northern Queensland (Froggatt). A single damaged specimen.

Genus 21. Conosia, v.d. Wulp.

Conosia, v.d. Wulp, Tijds. v. Entom. XXIII., p. 159, pl. x., figs. 5-7., 1880; O.-Sacken, Studies, II., p. 206, 1887.

Two sub-marginal cells; five posterior cells; a discal cell; auxiliary vein very long; sub-costal cross-vein situated before its tip a distance about equal to length of great cross-vein; marginal cross-vein joining the first sub-marginal cell near its inner end; *small cross-vein situated at or beyond the distal end of the discal cell.* Palpi short, *one-jointed.* Antennæ *12-jointed.* Tibiæ without spurs; empodia distinct; ungues long, smooth.

The palpi clearly consist of only one joint (Pl. xxiv., fig. 60, mouth parts) though Van der Wulp states that there are four, and figures them. Rostrum extremely short. Antennæ short, about one-third longer than the head; first joint thick, cylindrical, about one-third the length of entire antennæ; second globose, as wide as the first; third somewhat narrower, ovate; fourth and following joints small; the fourth globose, the rest gradually becoming more elongate until the terminal one is almost linear and about twice the length of the next preceding joint; verticillate-pilose (Pl. xxiv., fig. 61). Van der Wulp says "antennæ 14-articulatæ," but I think that the slender terminal joints have deceived him. The head is flattened, somewhat longer than broad; front broad, with an impressed line on each side; eyes round. Thorax gibbose, rather long, strongly projecting over the hinder portion of the head; a distinct small pit on each side behind the humeri; scutellum rather large, almost the width of the thorax; metathorax somewhat steep. Abdomen long, slender, cylindrical; male forceps

Limnophila-like, consisting of two sub-cylindrical basal pieces, with a horny claw-like appendage at apex, underneath which is a soft, somewhat pointed appendage (Pl. xxiv., fig. 62). Legs somewhat stout; the fore femora abruptly attenuated for their basal third. Wings shorter than the abdomen, tolerably broad, and a little dilated about the middle of the anterior margin. The veins above the third longitudinal have their tips slightly arcuated anteriorly, those below it have them arcuated posteriorly. Between the costa and auxiliary veins, beyond the origin of the præfurca, there is usually a variable quantity of venous reticulation, apparently originating in the costa, and sometimes actually forming distinct cross-veins. In all the specimens before me the auxiliary vein reaches the costa beyond the marginal cross-vein, the distance being somewhat variable; however, according to Van der Wulp's figure, the auxiliary vein in his specimen joins the costa some distance *before* the marginal cross-vein.

The first longitudinal vein ends in the costa near the posterior end of the stigma, and opposite a point a little beyond the distal end of the discal cell; according to Van der Wulp's figure it should join considerably before this, and opposite the origin of the third longitudinal vein. The marginal cross-vein is very oblique and has its posterior end generally opposite the tip of the auxiliary vein or thereabouts. The præfurca is a little shorter than the first sub-marginal cell, rather straight, but a little arcuated near its origin. The first sub-marginal cell commences a little before the second. The most remarkable character in the venation is that the small cross-vein is situated at the distal end of the discal cell, a position it is unknown to occupy in the wing of any other member of the family; on account of the position of the cross-vein the first posterior cell is unusually short; its inner end is more or less beyond the distal end of the discal cell. The discal cell is almost triangular, a little angular at the joining of the great cross-vein. The great cross-vein is situated a short distance beyond the inner

end of the discal cell, and is sometimes somewhat sinuous. Seventh longitudinal vein bisinuated towards its tip.

348. Conosia irrorata, Wiedemann.

Limnobia irrorata, Wied., Auss. Zweifl. I., p. 574, 1828; *Limnophila Crux*, Doleschall, Nat. Tijds. N. Ind. XIV., p. 388, pl. iv., f. 3, 1856 (?); *Conosia irrorata*, v. d. Wulp, Tijds. v. Entom. XXIII., p. 161, pl. x., figs. 5-7, 1880; Osten-Sacken, Studies II., p. 206, 1887.

♂.—Length of antennæ.....	0·057 inch ...	1·44 millimètres.
Expanse of wings.....	0·350 × 0·090 ...	8·89 × 2·27
Size of body.....	0·500 × 0·042 ...	12·70 × 1·06
♀.—Length of antennæ.....	0·060 inch ...	1·54 millimètres.
Expanse of wings.....	0·420 × 0·100 ..	10·66 × 2·54
Size of body.....	0·610 × 0·042 ...	15·49 × 1·06

Greyish-ochreous, dull; the pubescence on the thorax and abdomen usually centred in minute brownish dots. Thorax with a more or less distinct brownish line, usually uninterrupted from collare to posterior border of metanotum. Club of halteres brownish. Abdomen more or less tinged with brownish, particularly the terminal segments; clothed with yellowish hairs; ♂ forceps concolorous with rest of body; ♀ ovipositor slightly curved upwards; upper valves shining testaceous, lower ones black. Coxæ and femora usually pale ochreous-yellow; last one or two tarsal joints brown. Wings irregularly spotted with clouds of brown in the costal (over the venous reticulation) and marginal cells; a rather prominent pointed streak of brown directed downwards to and enveloping the basal portion of third longitudinal vein; also origin of præfurca, basal half of great cross-vein and (often) tip of seventh longitudinal vein clouded with brown; the veins ochreous, all

numerously spotted with brown ; stigma brown, rather paler than the markings.

Hab.—Sydney and other localities in N.S.W., May to October. (Masters and Skuse); Brisbane, Queensland, (Mr. H. Tryon); usually found among grass.

Obs.—Two specimens in the Macleay collection labelled Nepaul and Fiji respectively, do not seem to exhibit any characters which would lead one to separate them from this species. The same remarkable species it appears also occurs in Borneo, Ceylon, China and the Arabian Desert.

Section IV. Limnophilina.

"Two sub-marginal cells ; usually five, seldom four posterior cells ; discal cell generally present ; sub-costal cross-vein posterior to the origin of the second longitudinal vein, usually closely approximated to the tip of the auxiliary vein (considerably distant from it in *Trichocera* only). Eyes glabrous (pubescent in *Trichocera*). Normal number of antennal joints sixteen. Tibiæ with spurs at the tip ; empodia distinct ; ungues smooth." (Osten-Sacken).

The Section Limnophilina includes about a dozen recognized genera. The genera *Gynoplistia* and *Cerozodia*, peculiar to the Australian region, possess remarkable characters and are closely allied ; the former seems numerous, but only two species of *Cerozodia* have been described. *Ctedonia*, Phil., from Chili, to which *Gynoplistia fusca*, Jaen., is referred, is, according to Baron Osten-Sacken, closely allied to *Cerozodia*. Except *Limnophila*, the other genera contain but few known species.

Genus 22. Limnophila, Macquart.

Limnophila, Macq., S. à B. Dipt. I. p. 95, 1834 ; *Limnomya*, Rondani, Prod. etc., IV. Corrigenda, 1861 ; *Limnophila*, O-Sacken, Mon. Dipt. N. Amer. IV. pp. 196-202, pl. 2, f. 6-10 (wings); pl. 4, f. 23-27 (genitalia), 1869 ; Studies, II. p. 209, 1887.

"Two sub-marginal cells; usually five, seldom four posterior cells; discal cell closed; sub-costal cross-vein posterior to the origin of the second longitudinal vein, usually closely approximated to the tip of the auxiliary vein. Wings glabrous. Eyes glabrous. Antennæ 16-jointed. *Tibiæ with spurs at the tip;* empodia distinct; ungues smooth." (Osten-Sacken.)

The genus is of universal distribution; its numerous species are remarkable for their discordant characters, some of which at first sight seem of too much importance to be merely specific, being in many cases common to a natural group of two, three, or more species, yet doubtfully of generic value; the entire assemblage of groups and isolated species being bound together by a tie which renders dismemberment difficult and unsatisfactory. Though the species are classified under two sections,—those with four, and those with five posterior cells to the wings,—this division is clearly far less natural than it is convenient; for some species in one section are found to be certainly more related to those in the other than they are to the species with which they are associated. It also seems impossible to attach more than specific importance to the length of the antennæ, which varies tremendously even in closely allied species. Baron Osten-Sacken considers that "the most reliable characters to guide us are those taken from the structure of the male forceps; but in order to be available, they must be supported by characters supplied by other parts of the organization." Working on this rule, he found it only possible to provisionally admit a few sub-generic divisions which await better definition, and to point out some groups of species which appear allied.

One species now described, *L. aureola*, approaches, but does not entirely correspond with, Baron Osten-Sacken's *L. recondita* and *imbecilla* group; and another, *L. rostrifera* clearly belongs to his *L. luteipennis* group; all the other species appear only to add to the perplexity of forms already known, though a few certainly couple together in groups. We must await further discoveries before this genus can be understood, or a satisfactory classification

of the species effected. Some species must be left in abeyance on account of the male sex being at present unknown.

I. Five posterior cells.

349. Limnophila leucophæata, sp.n. (Pl. xxii., fig. 18).

♀.—Length of antennæ ..... 0·120 inch ... 3·04 millimètres.
Expanse of wings..... 0·400 × 0·090 ... 10·16 × 2·27
Size of body..... 0·440 × 0·050 ... 11·17 × 1·27

Head brown, with a yellowish-grey bloom; front with a slightly darker median line; rostrum and palpi dark brown or blackish; antennæ brown, the two basal joints more or less ochreous; flagellar joints sub-cylindrical, slender, the first five or six becoming larger beneath at the apex; with short bristly verticils. Thorax brown, opaque, pruinose with greyish, with three more or less distinct narrow stripes; intermediate one terminating midway between collare and suture, and lateral ones reaching the suture; an almost crescent-shaped marking behind the humeral pits, stretching from below extremity of lateral stripes almost to suture; pleuræ with a pale greenish-ochreous, ochreous, or even sordid testaceous stripe from collare to scutellum (including origin of the wings), followed by a deep brown or black stripe which terminates at metanotum; the remainder brown or brownish; scutellum more or less tinged with yellowish or testaceous. Halteres infuscated, the base of stem ochreous. Abdomen deep brown, levigate; ovipositor long, slightly curved, the valves tinged with testaceous. Coxæ whitish to reddish-ochreous. Femora sordid or greyish-yellow, deepening into black before the tip, the tip white; tibiæ black or deep brown, with a moderately broad ring of white at base, and slightly tipped with white; tarsi white, except that in the fore legs the metatarsal joint is brown (just beyond the base) for half its length. Wings tinged with pale brownish for three-fourths of their length, the anterior margin brown to stigma, and the veins at apex with

several small brown clouds; the clear spaces in the wings almost whitish; a squarish space a little before origin of præfurca, followed by another of uncertain shape about middle of præfurca; the fourth and fifth longitudinal veins are more or less distinctly clouded at intervals with brown or brownish; a rather prominent brown spot at tip of anterior branch of second longitudinal vein; veins and stigma brown. Auxiliary vein reaching costa opposite the middle of petiole of first sub-marginal cell; the sub-costal cross-vein opposite inner end of second sub-marginal cell; sub-costal cell a little expanded just before the tip of first longitudinal vein; præfurca moderately long, straight except at the base; petiole of first sub-marginal cell usually about one-third the length of the præfurca; marginal cross-vein a little nearer inner end of first sub-marginal cell than to tip of first longitudinal vein; branches of second longitudinal, particularly the posterior one, arcuated; second sub-marginal cell longer than the first posterior cell by a distance equal to length of great cross-vein; second posterior cell about half the length of the first posterior cell; great cross-vein at inner end of discal cell; tips of fork of posterior branch of fourth longitudinal considerably, and tips of fifth and sixth longitudinal vein slightly arcuated; seventh longitudinal vein conspicuously sinuated.

Hab.—Neutral Bay and Middle Harbour, near Sydney (Skuse). On wet rocks near waterfalls in May and November.

350. Limnophila obscuripennis, sp.n. (Pl. xxii., fig. 19).

♂.—Length of antennæ.....	0·080 inch	...	2·02 millimètres.
Expanse of wings	0·340 × 0·075	...	8·62 × 1·89
Size of body.....	0·260 × 0·040	...	6·62 × 1·01
♀.—Length of antennæ.....	0·080 inch	...	2·02 millimètres.
Expanse of wings.....	0·340 × 0·075	...	8·62 × 1·89
Size of body.....	0·320 × 0·040	...	8·12 × 1·01

Head brown, with a yellowish-grey bloom ; rostrum, palpi and antennæ dark brown ; first flagellar and apex of second basal joint usually ochreous-yellow ; flagellar joints becoming very slender and cylindrical towards tip, the first flagellar joints elliptical ; short bristly verticils. Thorax brown, with four pale, ochreous or greyish, narrow stripes ; two intermediate ones stopping just before the suture ; the lateral ones extending opposite the origin of the wings. Halteres brown. Abdomen brown ; ♂ forceps brown, of ordinary structure ; ♀ ovipositor long, a little curved, testaceous or ochreous. Legs light ochreous, densely clothed with tolerably long hairs ; tibiæ and tarsi brownish at the tips. Wings almost completely tinged with brownish ; the extreme apex clear whitish, usually from tip of anterior branch of second longitudinal to tip of anterior branch of fourth longitudinal vein ; also usually a small whitish clear space at each end of stigma ; stigma and veins brown. Auxiliary vein reaching costa about opposite inner end of second sub-marginal cell ; sub-costal cross-vein a short distance before its tip ; sub-costal cell a little expanded just before tip of first longitudinal vein ; præfurca moderately long, almost straight (quite straight and originating at a very acute angle in some specimens) ; petiole of first sub-marginal cell as long or longer than great cross-vein ; marginal cross-vein pale, situated mid-way between inner end of first sub-marginal cell and tip of first longitudinal vein ; branches of second longitudinal, especially the posterior, arcuated ; second sub-marginal cell slightly shorter than first posterior cell ; second posterior cell short, less than half the length of first posterior ; discal cell rather elongate, its inner end situated before that of the first posterior cell a distance nearly equal to length of great cross-vein ; inner end of fourth posterior cell before that of third posterior a distance about equal to length of great cross-vein ; great cross-vein beyond inner end of discal cell ; seventh longitudinal vein sinuated.

Hab.—Sydney, Berrowa and Knapsack Gully, Blue Mountains, N.S.W. (Skuse). April and August.

351. Limnophila disposita, sp.n.

♀.—Length of antennæ..... 0·045 inch ... 1·13 millimètres.
Expanse of wings..... 0·290 × 0·080 .. 7·35 × 2·02
Size of body..... 0·280 × 0·040 ... 7·10 × 1·01

Head and antennæ ochreous-brown; rostrum and palpi dark brown. Thorax ochreous-brown, dull, infuscated anteriorly, with indistinct traces of longitudinal stripes; pleuræ and metanotum pruinose with yellowish. Halteres yellow. Abdomen ochreous-brown, somewhat darker than thorax, a little shining, clothed with short yellow hairs; ovipositor tolerably long, slightly curved, tinged with testaceous. Legs yellowish-tawny or ochreous; femora with a brown ring just before tip; tibiæ and first three tarsal joints infuscated at tip; last two tarsal joints entirely infuscated. Wings pellucid, with a yellowish or pale brownish tint; veins brown; stigma hardly perceptible. Auxiliary vein reaching costa opposite or short distance beyond inner end of second sub-marginal cell; sub-costal cross-vein situated before tip a distance about equal to length of great cross-vein; præfurca short, considerably arcuated at base; petiole of first sub-marginal cell about half the length of præfurca; marginal cross-vein about midway between inner end of first sub-marginal cell and tip of first longitudinal vein; branches of second longitudinal vein divergent but little arcuated; inner ends of second sub-marginal, first posterior and discal cells in one line; second posterior cell very small, not half the length of the third posterior; discal cell oblong; great cross-vein situated about the middle of its length; seventh longitudinal vein curved at its tip.

Hab.—Sydney (Masters and Skuse). Two specimens during September.

352. Limnophila aureola, sp.n. (Pl. xxii. fig. 20).

♂.—Length of antennæ..... 0·055 inch ... 1·39 millimètres.
Expanse of wings..... 0·180 × 0·057 ... 4·56 × 1·44
Size of body..... 0·120 × 0·030 ... 3·04 × 0·76

♀.—Length of antennæ.....	0·055 inch	...	1·39 millimètres.
Expanse of wings.....	0·240 × 0·065	...	6·09 × 1·66
Size of body.....	0·130 × 0·030	...	3·30 × 0·76

Head, including rostrum, palpi, and antennæ light fulvous-yellow to brownish; flagellar joints slender, cylindrical, with spare bristly verticils. Thorax pale fulvous, somewhat shining, with two longitudinal rows of yellow hairs. Halteres yellow. Abdomen brown or brownish, more or less tinged with ochreous or fulvous; clothed with yellow hairs; ♂ forceps of ordinary type, concolorous with rest of body; ♀ ovipositor nearly straight, ochre-yellow. Legs yellow, densely clothed with tolerably long yellow hairs; tibial spurs small. Wings pellucid, with a faint yellowish tint; veins yellowish; stigma indistinct; the origin of the præfurca with a small, but distinct, brownish cloud; cross-veins and tips of all the veins just perceptibly clouded. Auxiliary vein shorter than usual, reaching costa beyond origin of second longitudinal vein a distance equal to about length of great cross-vein; sub-costal cross-vein a little beyond origin of the latter; præfurca moderately long, angularly bent at its origin, with a short stump of a vein, the rest straight; petiole of first sub-marginal cell somewhat more than one-third the length of præfurca; marginal cross-vein situated at inner end of first sub-marginal cell, and only a little before tip of first longitudinal vein; second sub-marginal cell somewhat longer than first posterior; inner end of latter in line with that of discal cell; second posterior cell short, less than half the length of third posterior; discal cell oblong; great cross-vein situated at the middle of its length; seventh longitudinal vein a little curved at its tip.

Hab.—Lawson, Blue Mountains (Masters). Two specimens in January.

Obs.—This species seems to approach the *L. recondita* and *L. imbecilla* group of Baron Osten-Sacken; but the auxiliary vein is shorter and the base of the second longitudinal differs in being strongly angulated.

353. Limnophila ocellata, sp.n. (Pl. xxii. fig. 21).

♂.—Length of antennæ.....	0.040 inch ...	1·01 millimètres.
Expanse of wings.....	0·210 × 0·047 ...	5·33 × 1·18
Size of body.....	0·150 × 0·020 ...	3·81 × 0·50
♀.—Length of antennæ.....	0·040 inch ...	1·01 millimètres.
Expanse of wings.	0·250 × 0·060 ...	6·34 × 1·54
Size of body.....	0·210 × 0·030 ...	5·33 × 0·76

Head brown, with a yellowish-grey or brownish bloom; rostrum ochreous-brown or brownish; palpi and antennæ black; flagellar joints cylindrical, the first two or three more elliptical. Thorax covered with a yellowish-grey or brown bloom, with three brown stripes; intermediate stripe extending from collare to suture, marked with two small approximate shining dots at one third of its length from anterior extremity; lateral stripes short; humeral pits prominent, in a line with intermediate dots; pleuræ, scutellum and metathorax with a greyish bloom. Halteres pale yellow. Abdomen dark brown or blackish; ♂ forceps dull ochreous or pale greyish-brown, the terminal appendages black, single, truncate, with a minute hook at the outer angle; ♀ ovipositor long, slender, very little curved, tinged with ochreous towards extremity. Coxæ greyish-ochreous. Remaining joints brown to black. Wings with a slightly greyish tint, marked with brownish (more inky when fresh), chiefly coalescent ocellate, spots; an incomplete ocellus has the origin of præfurca for its centre, and is coalescent with another more or less complete ocellus reaching to the posterior margin; others are more or less distinct, centred round the cross-veins, and generally coalescent; an ocellus at distal end of discal cell often distinct and very perfect; leaving two sub-hyaline transverse bands, the first opposite middle, the second opposite tip, of auxiliary vein. Auxiliary vein rather short, reaching costa opposite middle of præfurca; sub-costal cross-vein situate beyond origin of præfurca a distance equal to length of great cross-vein; præfurca

bent at an obtuse angle near its base, sometimes with a short stump of a vein, the rest straight, twice (or more) the length of petiole of first sub-marginal cell ; marginal cross-vein usually indistinguishable, situated at or before inner end of first sub-marginal cell, and a little before tip of first longitudinal vein ; inner ends of second sub-marginal and first posterior cells in one line ; small cross-vein arcuated ; second posterior cell usually less than half the length of the third posterior ; discal cell elongate, as long or longer than third posterior cell ; great cross-vein situated beyond its inner end ; seventh longitudinal a little arcuated at its tip.

Hab.—Sydney and Berowra, N.S.W. (Skuse). April and June ; also taken *in copulâ* during September.

Obs.—Ten specimens for comparison. The second posterior cell varies in size, even in the wings of a single specimen ; it is entirely absent in one wing of a female specimen before me. The position of the dots on the intermediate thoracic stripe differs from that of *L. luteipennis*, *contempta* and *inornata*, O.-Sack., where they are situated at the anterior extremity, close to the collare.

354. Limnophila rostrifera, sp.n.

♀.—Length of antennæ.....	0·085 inch	...	2·14 millimètres.
Expanse of wings.....	0·410 × 0·090	...	10·41 × 2·27
Size of body.....	0·460 × 0·050	...	11·67 × 1·27

Head narrowed posteriorly, greyish-brown ; collare prolonged, greyish-brown ; rostrum the length of the head, greyish-brown ; palpi dark brown ; antennæ brown, the first joint of scapus greyish-brown ; flagellar joints fusiform. Thorax with a greyish bloom, opaque, with three broad brown stripes ; intermediate stripe apparently double, with two small shining black dots at its anterior extremity ; lateral ones extending beyond the suture, more or less coalescent with base of intermediate stripe ; humeral pits prominent ; pleuræ and metathorax more or less hoary. Halteres ochreous, with infuscated club. Abdomen brown, superior segments bordered laterally and posteriorly with

ochreous; venter ochreous, or ochreous-brown; ovipositor long, slender, slightly curved, ochreous or testaceous. Coxæ ochreous or brownish-ochreous, somewhat hoary. Femora testaceous, darkening into brown at the tips; tibiæ and tarsi brown. Wings pellucid, with a very slight brownish tint; the costal (except at base) and sub-costal cells, origin of præfurca, inner ends sub-marginal and all the posterior cells clouded with brown; also margins round apex of wing clouded with brown; stigma elongate, brown; veins brown. Auxiliary vein reaching first longitudinal vein opposite or somewhat before inner end of second sub-marginal cell, connected near the tip by cross-vein to costa; præfurca of moderate length, arcuated at base; petiole of first sub-marginal cell equal in length to posterior branch of second longitudinal vein; the latter arcuated at its base, the remainder a little bent; marginal cross-vein situated beyond the middle of petiole of first sub-marginal cell, and a distance equal to its length from tip of first longitudinal vein; inner end of second sub-marginal cell rounded, situated a little before that of first posterior cell; small cross-vein a little arcuated, in line with inner end of discal cell; the latter at least as long as third posterior cell; second posterior cell less than half the length of third posterior; great cross-vein situated a short distance beyond inner end of discal cell; seventh longitudinal vein arcuated at its tip.

Hab.—Sydney? (Masters). Three specimens.

Obs.—This species approaches O.-Sacken's *L. luteipennis* group by the structure of the head, prolongation of collare, double dots on anterior extremity of intermediate thoracic stripe, &c., but the second sub-marginal cell is shorter, the posterior branch of the second longitudinal vein is only a little arcuated, and the rostrum is as long as the head.

355. Limnophila imitatrix, sp.n. (Pl. xxii. fig. 22).

♂.—Length of antennæ.....	0·060 inch	...	1·54 millimètres.
Expanse of wings	0·380 × 0·080	...	9·64 × 2·02
Size of body.....	0·350 × 0·040	...	8·87 × 1·01

♀.—Length of antennæ.....	0·060 inch	...	1·54 millimètres.
Expanse of wings.....	0·410 × 0·090	...	10·41 × 2·27
Size of body.....	0·400 × 0·040	...	10·16 × 1·01

Head with a grey or yellowish-grey bloom; rostrum, palpi and antennæ black or dark brown; flagellar joints elliptical with very short verticils. Thorax covered with a grey or yellowish-grey bloom, traversed by three brown stripes; intermediate stripe terminating immediately before the suture; lateral ones shorter, narrow, reaching beyond suture; humeral pits black, shining; pleuræ, scutellum and metathorax blackish-brown with a greyish bloom. Halteres fulvous-yellow. Abdomen uniformly blackish-brown, clothed with short light hairs; ♂ forceps of ordinary type, concolorous with abdomen; ♀ ovipositor long, almost straight, reddish-brown. Coxæ and base of femora fulvous; remainder of joints usually uniformly dusky or blackish-brown, sometimes darker at the tips. Wings pellucid with a very pale brown tint, yellowish at the base; costal cell and inner ends of sub-marginal, discal and posterior cells, origin of præfurca, great-cross vein and tips of all the veins more or less distinctly clouded with brownish; veins dark brown; stigma pale. Auxiliary vein reaching first longitudinal vein opposite inner end of first sub-marginal cell, connected a short distance from its tip by a cross-vein to costa; præfurca moderately long, arcuated at base or angulated (sometimes with a short stump of a vein), otherwise straight; petiole of first sub-marginal cell very short, only about length of marginal cross-vein; inner end of first sub-marginal cell somewhat rounded; marginal cross-vein very pale and difficult to distinguish, cutting the middle of stigma, and situated scarcely nearer to tip of first longitudinal vein than to inner end of first sub-marginal cell; inner end of second sub-marginal cell rectangular; first posterior cell as long or very slightly longer than second sub-marginal; small cross-vein curved; discal cell usually a little wider at its distal end, its inner end somewhat before that of first posterior cell; second posterior cell half the length of third; great cross-vein at

middle of discal cell; seventh longitudinal vein a little arcuated at the tip.

Hab.—Mount Kosciusko, N.S.W., 5-6000 ft. (Helms). March; *nine specimens in Coll. Australian Museum.*

Obs.—Very like *L. rostrifera* in size, colour of legs, and vein-cloudings but in all other respects a very different insect.

356. Limnophila antiqua, sp.n. (Pl. xxii., fig. 23).

♂.—Length of antennæ.....	0·140 inch	...	3·55 millimètres.
Expanse of wings.....	0·380 × 0·090	...	9·64 × 2·27
Size of body.....	0·320 × 0·040	...	8·12 × 1·01
♀.—Length of antennæ.....	0·130 inch	...	3·30 millimètres.
Expanse of wings.....	0·400 × 0·090	...	10·16 × 2·27
Size of body.....	0·380 × 0·040	.	9·64 × 1·01

Head more or less slaty-grey, tinged with ochreous; rostrum and palpi black; antennæ ochreous, the two basal joints sometimes brown or brownish (in one specimen blackish); flagellar joints long, cylindrical, ringed with brown at the base, densely and uniformly covered with short hairs interspersed with some longish bristles. Thorax very gibbose, projecting over the head, ochreous or greyish-ochreous (sometimes light brownish), opaque, with a prominent brown band round mesonotum, across pleuræ, to base of abdomen; two longitudinal rows of brown hairs; prosternum with a narrow longitudinal brown stripe; metanotum long. Halteres very long and slender, ochreous, the club more or less infuscated. Abdomen ochreous-brown or brownish; ♂ forceps brown or brownish, terminating with two beak-like movable appendages, densely covered with minute hairs, the outer one slightly hooked at the tip (pl. xxiv., fig. 63); ♀ ovipositor slightly curved, tinged with reddish-brown. Legs yellow, or brownish-yellow. Wings with a pale brownish tint, entirely covered with numerous brownish dots or small spots in all the cells; a

somewhat, though not conspicuously, larger spot at the tip of most of the veins and at origin of præfurca; and a still larger, prominent, more or less wedge-shaped marking, based on the costa at tip of auxiliary vein and terminating at small cross-vein; veins brown or brownish; stigma elongate, pale. Auxiliary vein joining costa or first longitudinal* vein a short distance beyond inner end of first sub-marginal cell; sub-costal cross-vein near its tip; præfurca moderately long, arcuated, or even angulated, at its origin; petiole of first sub-marginal cell short, about equal in length to great cross-vein; branches of second longitudinal vein and the third longitudinal arcuated downwards; second sub-marginal and first posterior cells equal in length; small cross-vein somewhat arcuated; marginal cross-vein usually pale, situated a short distance from tip of first longitudinal vein; second posterior cell about two-thirds the length of third posterior; discal cell somewhat wider at its distal end, not long, its inner end situated a little before that of first posterior cell; great cross-vein at the middle or nearer the distal end; all the veins terminating on posterior margin slightly arcuated at the tip; seventh longitudinal vein distinctly arcuated at its tip.

Hab.—Sydney and Blue Mountains, N.S.W. (Masters and Skuse). Six specimens. October.

Obs.—This and the following species, *L. interventa*, are closely allied, and I have also a damaged specimen of another undescribed species with marbled wings which is nearly related. *L. antiqua* and *interventa* agree in the structure and markings of the antennæ, head and thorax, etc., differing principally in the venation and markings of the wings. In *L. interventa* the veins only are spotted.

357. Limnophila interventa, sp.n. (Pl. xxii., fig. 24).

♀.—Length of antennæ.....	0·140 inch ...	3·55 millimètres.
Expanse of wings.	0·450 × 0·095 ...	11·42 × 2·39
Size of body.....	0·400 × 0·040 ...	10·16 × 1·01

* It is impossible to decide which is the tip of the auxiliary vein and which the sub-costal cross-vein.

Structure and colouring of antennæ, thorax, and halteres entirely resembling *L. antiqua*; except that the thoracic brown band is obliterate on the mesonotum; and the abdomen ochreous, mottled with brownish. Wings pellucid, with a very pale brownish or yellowish tint; veins brownish, the costal, auxiliary and first longitudinal veins ochreous; the bases and tips of all veins, each end of the cross-veins, and inner ends of cells, with a very small brownish spot, imparting an indistinctly spotted appearance to the wings; præfurca clouded for a short distance at its origin; veins and stigma pale. Auxiliary vein reaching costa some distance beyond the inner end of first sub-marginal cell; sub-costal cross-vein situated near its tip; præfurca rather shorter than in *L. antiqua* (consequently the cells at apex of wing longer) obtusely angulated at its origin; petiole of first sub-marginal cell half the length of præfurca; branches of second longitudinal vein and the third longitudinal vein arcuated and running parallel as in *L. antiqua*; marginal cross-vein distinct, situated considerably before the tip of first longitudinal vein; inner end of second sub-marginal cell a short distance before that of first posterior cell and opposite that of discal cell; small cross-vein short, straight; second posterior cell about two-thirds the length of third posterior cell; discal cell elongate, twice the length of that of *L. antiqua*, the cross-vein closing its distal end being almost opposite the tip of fifth longitudinal vein; inner end of third posterior cell nearly opposite the middle of discal cell; great cross-vein opposite middle of discal cell; all the veins terminating in posterior margin a little arcuated at the tip.

Hab.—Northern Queensland (?). A single specimen.

358. Limnophila inordinata, sp.n. (Pl. xxii., fig. 25).

♂.—Length of antennæ.....	0·045 inch	...	1·13 millimètres.
Expanse of wings.....	0·350 × 0·080	...	8·87 × 2·02
Size of body.....	0·250 × 0·035	...	6·34 × 0·88

Head greyish-brown; rostrum, palpi, and antennæ brown; flagellar joints elliptical, with very short verticils. Thorax

covered with a yellowish-grey bloom, with three brown stripes; intermediate stripe broad, terminating at suture; lateral ones narrow, stopping at a brown spot opposite origin of wings; pleuræ brown. Halteres pale. Abdomen blackish-brown; forceps (apparently) of ordinary type, concolorous with rest of body. Legs brown, the tips of femora and tibiæ infuscated. Wings with a somewhat greyish tint; veins brownish, the bases and tips of veins, the cross-veins, and inner ends of cells very indistinctly infuscated; stigma very faintly infuscated. Auxiliary vein joining first longitudinal vein a little beyond inner end of second sub-marginal cell, joined to costa by a cross-vein exactly opposite the inner of that cell; præfurca moderately long, angulated near its origin, with a short stump of a vein; petiole of first sub-marginal cell less than one-fourth the length of præfurca; inner end of first sub-marginal cell rather acute, somewhat obliterate; marginal cross-vein very indistinct, cutting middle of stigma, and situated midway between inner end of first sub-marginal cell and tip of first longitudinal vein; second sub-marginal and first posterior cells of about equal length; small cross-vein curved; second posterior cell half the length of third; the latter shorter than fourth posterior cell;* discal cell elongate, the great cross-vein opposite the middle of its length; fifth and seventh longitudinal veins a little arcuated at the tip.

Hab.—Waterloo Swamps, near Sydney (Skuse). One specimen in June.

Obs.—There are some rather weak pieces of *adventitious* vein in the wings; in one wing a long curved piece originates from the fourth longitudinal vein opposite middle of præfurca; in both, an irregular very oblique piece forms a cross-vein across the middle of second basal cell; also in one wing there is a small stump of a vein near the tip of the seventh longitudinal vein.

---

* The posterior branch of fourth longitudinal vein being forked.

II. FOUR POSTERIOR CELLS.

359. LIMNOPHILA METALLICA, Schiner.

Limnophila metallica, Schiner, "Novara" Exp. Dipt. p. 41, 1868.

♂.—Length of antennæ.....	— inch ...	— millimètres.
Expanse of wings.....	0·400 × 0·090 ...	10·16 × 2·27
Size of body.....	0·370 × 0·070 ...	9·39 × 1·77

Chalybeous blue. Head deep black, covered with black pubescence, the anterior portion of the front distinctly gibbose; rostrum, palpi and antennæ blackish or dark brown; rostrum short; palpi prominent; antennæ setaceous (portion lost), rather densely clothed with semi-decumbent hairs; first basal joint rather short and cylindrical, the second small, globose, not half the length of first; flagellar joints sessile, the first flagellar joint longer and thicker than the following ones, sub-spatulate. Collare black, inconspicuous. Thorax not such a brilliant metallic blue as the abdomen, but more blackish; pleuræ and pectus sooty-black or dark brown. Halteres blackish or dark brown. Abdomen clothed with minute blackish hairs; forceps short, black. Legs blackish, or deep brown. Wings entirely infuscated with a blackish or brown tint; veins dark; stigma imperceptible. Auxiliary vein terminating a little beyond inner end of second sub-marginal cell; subcostal cross-vein at its tip; præfurca nearly straight, originating before the middle of the wing; petiole of first sub-marginal cell half the length of upper branch of second longitudinal vein; marginal cross-vein situated nearer inner end of first sub-marginal cell than to tip of first longitudinal; second sub-marginal cell longer than the first posterior; small cross-vein straight; discal cell a little longer than broad, the great cross-vein somewhat beyond its inner end; ultimate section of fifth longitudinal vein only equal to length of great cross vein, being abruptly turned to posterior margin.

Hab.—Sydney (Masters). One specimen.

Obs.—This species is remarkable for its metallic blue colour, dark wings, and broad, closely applied head. The antennæ it seems would scarcely reach the origin of the wings, the first seven joints measuring only 1·66 mm. There does not appear to be anything peculiar about the ♂ forceps, which are, however, difficult to examine in a dried specimen.

360. Limnophila luctuosa, sp.n. (Pl. xxii., fig. 26).

♀.—Length of antennæ.....	0·035 inch	...	0·88 millimètre.
Expanse of wings.....	0·250 × 0·060	...	6·34 × 1·54
Size of body.....	0·250 × 0·030	...	6·34 × 0·76

Head covered with a yellowish-grey bloom (shining black when rubbed); rostrum, palpi, and antennæ black; flagellar joints globose to elliptical, with very short, sparse verticils. Thorax covered with a yellowish-grey bloom, with three brownish stripes; the intermediate one disappearing before reaching the suture; lateral ones very short, reaching suture; pleuræ, scutellum, and metanotum with a hoary bloom (the ground colour deep brown). Halteres yellow. Abdomen brown, sparingly clothed with short yellowish hairs; ovipositor brownish-ochreous or fulvous. Coxæ and femora fulvous, the latter brown at the tip; tibiæ brownish, infuscated at the tip; tarsi infuscated. Wings with a scarcely perceptible brownish tint; veins brownish; stigma brownish-grey. Auxiliary vein reaching costa opposite or before inner end of second sub-marginal cell; sub-costal cross-vein a little before its tip; præfurca rather short, arcuated at its origin; petiole of first sub-marginal cell one-third to half the length of præfurca, and about half the length of anterior branch of second longitudinal vein; marginal cross-vein cutting stigma, and situated beyond inner end of first sub-marginal cell a distance about equal to its length, and more than twice that from tip of first longitudinal vein; inner ends of second sub-marginal and first posterior cells in one line; small cross-vein a little arcuated; discal cell elongated, the great cross-vein more or less beyond its inner end.

Hab.—Gosford, N.S.W., and Middle Harbour, Sydney (Skuse); Mount Kosciusko, N.S.W., 5000 ft. (Helms), *one specimen in Coll. Australian Museum.*

Obs.—I have taken only two specimens of this species.

361. Limnophila levidensis, sp.n. (Pl. xxii., fig. 27).

♂.—Length of antennæ.....	0·030 inch	...	0·76 millimètre.
Expanse of wings.....	0·220 × 0·045	...	5·58 × 1·13
Size of body	0·180 × 0·025	...	4·56 × 0·62
♀.—Length of antennæ.....	0·035 inch	...	0·88 millimètre.
Expanse of wings.....	0·250 × 0·060	...	6·34 × 1·54
Size of body.....	0·190 × 0·030	...	4·81 × 0·76

Head black, with a grey bloom; rostrum, palpi and antennæ black; basal joints of latter brown; flagellar joints sub-cylindrical, with very short verticils. Thorax greyish-ochreous or light brownish, mesonotum brownish in the ♀, levigate; transverse suture brown in the middle. Halteres pale, the club infuscated. Abdomen olive-brown, the venter paler; genitalia ochreous; ♂ forceps of ordinary type, terminal appendages black; ♀ ovipositor long, slender, slightly arcuated. Coxæ ochreous or pale brownish. Femora deep olive-brown; tibiæ and tarsi black. Wings with a greyish tint; veins dark; stigma greyish. Auxiliary vein terminating opposite or a little before inner end of second sub-marginal cell; sub-costal cross-vein considerably before its tip, that is, a distance at least equal to great cross-vein; præfurca tolerably long, nearly straight; first sub-marginal cell as long as præfurca, with a short petiole; marginal cross-vein indistinct, cutting stigma much nearer tip of first longitudinal vein than to inner end of first sub-marginal cell; inner ends of second sub-marginal and first posterior cells in one line; small cross-vein scarcely arcuated; discal cell elongated, the great cross-vein situated considerably beyond its inner end; fifth, sixth and seventh longitudinal veins more or less arcuated towards the tip.

Hab.—Mossman's Bay, near Sydney (Skuse). A pair *in copulâ* in August.

Obs.—Readily distinguished from *L. luctuosa* by the lighter thorax destitute of stripes, dark legs, greyish-tinted wings, dark veins, and length of præfurca and first sub-marginal cell.

362. Limnophila Lawsonensis, sp.n. (Pl. xxii., fig. 28).

♂.—Length of antennæ	0·640 inch ...	16·25 millimètres.
Expanse of wings.....	0·260 × 0·065 ...	6·62 × 1·66
Size of body.....	0·210 × 0·035 ...	5·33 × 0·88
♀.—Length of antennæ.....	0·080 inch ..	2·02 millimètres.
Expanse of wings.....	0·270 × 0·065 ...	6·85 × 1·66
Size of body.....,...	0·270 × 0·035 ...	6·85 × 0·88

Head brown, with a somewhat yellowish-grey bloom ; rostrum, palpi and antennæ brown ; ♂ antennæ more than three times the length of entire body, setaceous, densely clothed with very short almost erect pubescence ; the incisions between the first few flagellar joints yellowish, the rest not distinguishable ; ♀ antennæ short, exactly reaching origin of wings if bent back ; the second basal joint reddish-fulvous, and the first seven or eight flagellar joints reddish-yellowish at the tip ; first flagellar joint one-third longer and distinctly thicker than the second ; remaining joints gradually decreasing in length, those towards the tip sub-elliptical. Thorax brown, levigate, marked with several short stripes of greyish or yellowish-grey bloom ; pleuræ slightly hoary ; scutellar pits distinct, blackish. Halteres ochreous-yellow, the stem very slightly infuscated. Abdomen brown, clothed with yellowish hairs ; genitalia reddish-testaceous ; ♂ forceps with two pairs of short movable appendages ; the outer one sub-clavate, serrate on the outside towards and at the tip ; inner one arcuate (Pl. xxiv., fig. 64) ; ♀ ovipositor long, almost straight. Coxæ, femora and tibiæ testaceous to brownish-ochreous ; the femora with a broad ring of

black near the tip, preceded and followed (at the tip) by a narrow ring of golden-yellow; tibiæ infuscated at the base and tip (the extreme base golden-yellow); tarsi brown or brownish, the metatarsal joints more or less testaceous. Wings sub-hyaline, spotted with brown, more completely so in ♀ than ♂; basal cells in ♀ almost entirely clouded; in ♂ only at the ends and two roundish spots, one at præfurca, the other larger, beneath, in second basal cell; an oblong spot in anal cell filling space before the middle; similar clouds on margin in anal angle, and mid-way between the tips of sixth and seventh longitudinal veins; the remaining clouds more or less round, situated close to the tips of all the veins, and on the cross-veins, those on the latter confluent (Pl. XXII., fig. 28, ♀ wing); veins brown; stigma not noticeable. Auxiliary vein reaching costa some distance before inner end of second sub-marginal cell; sub-costal cross-vein a little before its tip; præfurca of moderate length, arcuated close to its base; petiole of first sub-marginal cell about (more or less) twice the length of anterior branch of second longitudinal vein; the latter branch obliquely situated, very slightly sinuose, joining costa a little beyond the tip of first longitudinal vein; posterior branch of second longitudinal vein slightly arcuated anteriorly, rather longer than petiole of first sub-marginal cell; marginal cross-vein wanting; inner end of second sub-marginal cell situated considerably before that of first posterior cell; small cross-vein short; third posterior cell considerably longer than the second posterior; discal cell elongate, the great cross-vein situated at its inner end; fifth, sixth and seventh veins arcuated at the tip, the seventh the most noticeably.

Hab.—Lawson, Blue Mountains, N.S.W. (Masters). Two specimens in January.

Obs. 1.—A ♀ specimen obtained by Mr. A. G. Hamilton at Mount Kembla, Illawarra District, appears to belong to this species; it is however considerably damaged. The anterior branch of second longitudinal vein differs in being almost vertical, joining the costa

immediately beyond the tip of the first longitudinal vein, and looking like a cross-vein.

Obs. 2.—This and the following species, *L. australasiæ*, form a natural group, and might be considered at least a distinct subgenus. The antennæ are long in the male, short in the female; in *L. Lawsonensis* the male antennæ being more than three times the length of the entire body. The head is broad; collare inconspicuous. Male forceps (Pl. xxiv. fig. 64) with a serrate, clavate, outer appendage, and an inner arcuated one. Femora ringed before the apex. Wings numerously spotted with brown. Auxiliary vein stopping considerably before the inner end of the second sub-marginal cell; marginal cross-vein entirely wanting; first sub-marginal cell short, with a long petiole; the anterior branch of the second longitudinal vein joining the costa not far beyond the tip of the first longitudinal vein; second sub-marginal cell longer than first posterior; third posterior cell longer than second; great cross-vein usually at inner end of discal cell.

363. Limnophila australasiæ, sp.n. (Pl. xxiii. fig. 29).

♂.—Length of antennæ.....	0·190 inch	...	4·81 millimètres.
Expanse of wings.....	0·260 × 0·065	...	6·62 × 1·66
Size of body.....	0·220 × 0·035	...	5·58 × 0·88
♀.—Length of antennæ.....	0·070 inch	...	1·77 millimètres.
Expanse of wings.....	0.290 × 0·090	...	7·35 × 2·27
Size of body....., ...	0·250 × 0·035	...	6·34 × 0·88

Head brown, with a yellowish-grey bloom; rostrum, palpi and antennæ brown, the first few joints of latter usually more or less testaceous; ♂ antennæ not quite the length of entire body, setaceous, densely clothed with tolerably long, almost erect pubescence; flagellar joints gradually decreasing in length, the incisions between the first seven or eight ochreous; ♀ antennæ short, scarcely reaching origin of wings if bent back; flagellar joints sub-elliptical,

the first cylindrical, about the length of second and third taken together. Thorax covered with yellowish-grey bloom, with brown stripes and spots*; two more or less distinct, somewhat irregular, intermediate stripes terminating at transverse suture; two lateral ones from below humeri to above origin of wings; a roundish spot on each side at the back of mesothorax; a deep brown stripe on lateral border from collare to origin of wings; pleuræ covered with a greyish or yellowish-grey bloom, with a short brown stripe midway between origin of wings and fore coxæ; scutellum and metathorax more or less covered with greyish bloom, the scutellar pits distinct, brown. Halteres ochreous-yellow, the club usually slightly infuscated. Abdomen brown; the posterior margins of segments and venter more or less ochreous; genitalia reddish-testaceous, similar in structure to *L. Lawsonensis*. Legs ochreous or dull testaceous; the joints ringed as in *L. Lawsonensis*. Wings sub-hyaline, in both sexes spotted exactly as in the ♂ of *L. Lawsonensis*; venation very similar to that of last species, except that the anterior branch of second longitudinal vein in all cases joins the costa beyond the tip of first longitudinal vein a distance at least equal to its length.

Hab.—Woronora, and Knapsack Gully, Blue Mountains, N.S.W., 5 ♂, 7 ♀ specimens (Masters and Skuse); King George's Sound, Western Australia (Masters), *two* ♀ *specimens in Coll. Australian Museum.*

Obs.—Easily distinguished from *L. Lawsonensis* by the shorter male antennæ, which are less than the length of the body in this species.

364. Limnophila vicaria, Walker.

Limnobia vicaria, Walk., Ent. Mag. II. p. 469, 1835.

Like *Lim. geniculata* (Meigen, Syst. Beschr. II. pl. 2, fig. 15, wing).

---

* The pattern in the thorax seems only a modification of that in *L. Lawsonensis*.

"♀.—Fusca, obscura ; caput fulvo-fuscum, angustum ; oculi obscurè fusci ; antennæ fuscæ, capite paullò longiores ; thorax subtus et posticè fulvus ; abdomen obscurè fuscum, longum, gracile ; femora ferè omnia tibiæ que basi et apice pallidè fusca ; tarsi apice et ungues nigri ; alæ subhyalinæ, iridescentes ; costa fusca, basi pallidior, maculis plurimis subhyalinis ; subcostam maculæ 4 majores sub fuscæ ; squamulæ et nervi fusca ; nervi omnes longitudinales punctis fuscis ornati ; nervulus transversus discoidalis fusco limbatus ; halteres pallidè fulvi, apice fusci." Corp. long. 7 lin. ; alar. 10 lin.

Hab.—New Holland.

365. Limnophila basalis, Walker.

Limnobia basalis, Walk., Ins. Saund. Dipt. p. 434, 1856.

(Div. E. Meig, Syst. Beschr. II. p. 125, pl. 6, fig. 2).

"Nigra, nitens ; alæ nigricantes, venis nigris."

"♀.—Black, shining. Oviduct short, nearly cylindrical. Wings blackish ; veins and halteres black. Length of the body 5 lines ; of the wings 10 lines."

Hab.—Van Diemen's Land.

Genus 23. Gynoplistia, Westwood.

Gynoplistia, Westw., Lond. and Edinb. Phil. Mag. VI. p. 280, 1835 ; *Gynoplistes* [nec *Anoplistes*] Westw., Zool. Journ., V., p. 447 (No. 20, 1835) ; *Gynoplistia*, Macquart, S. à B. II. Suppl. p. 649, 1835 ; Dipt. Exot. I. p. 43, 1838 ; *Variegata*, Bigot, Ann. Soc. Ent. Fr. 1854, p. 456 ; *Cloniophora*, Schiner, Wien. Ent. Monatschr. 1866 ; "Novara" Exp. Dipt. p. 40, 1868 ; *Cœnarthria*, Thomson, "Eugenia" Exp. Dipt. p. 445, pl. ix. f. 1, 1868 ; *Gynoplistia*, O.-Sack., Mon. Dipt. N. Amer. IV. App. II. p. 331, 1869 ; Westw., Trans. Ent. Soc. Lond. 1881, p. 369. pl. xviii. figs. 5-6-7 ; O.-Sack., Studies, II. p. 210, 1887.

Two sub-marginal cells ; five (rarely only four*) posterior cells ; discal cell closed ; auxiliary vein reaching costa more or less opposite inner end of second sub-marginal cell ; sub-costal cross-vein near its tip ; first longitudinal vein reaching costa about opposite middle of anterior branch of second longitudinal vein ; first sub-marginal cell with a short petiole ; seventh longitudinal vein distinctly sinuated. Wings glabrous. Eyes glabrous. Antennæ 16- to 20-jointed, usually most of the flagellar joints unipectinate in both sexes. Tibiæ spurred ; empodia distinct ; ungues smooth. The forceps of the male *Limnophila*-like ; usually with only one horny claw-shaped appendage.

Rostrum short, with large suctorial labella. Head wider than long ; eyes round, slightly emarginate at base of antennæ ; front broad ; palpi tolerably long, joints about equal or the first shortest. The antennæ usually short, shorter in ♀ than in ♂, seldom reaching beyond the root of the wings if bent backwards, reaching beyond only in *G. vilis* (♂) ; the number of joints varies from 16 to 20 in both sexes, the number being somewhat variable in individuals of the same species ; in ♂ the first 10 to 15, and in ♀ the first 8 to 12, flagellar joints unipectinate, the branches shorter in ♀ than in ♂ (in *G. jucunda*, O.-Sack., from Celebes, only the first 6 flagellar joints are branched in both sexes) ; the branches are on the inner side of the antennæ, except the two first which are directed outwards, only in *G. vilis* are the three first directed outwards. Baron Osten-Sacken (Studies II. p. 210), says "the three first branches in all the species are inserted sideways, and hence are pointing in a direction different from that of the others," but I find that the third branch, in all but *G. vilis*, is inserted scarcely more sideways than the following ones ; in the last-named species, the fourth branch is situated similarly to the third in the remaining species. Macquart's figures of the antennæ of *G. vilis* (Dipt. Exot. 4th Suppl. pl. i. fig. 2) and of *G. bella* (*variegata*, Macq.) correctly show the difference between them. The terminal joints of the

* Only four posterior cells in *Gyn. jucunda*, O.-Sack., from Celebes (Ann. del Mus. Civ. di St. Nat. di Gen. XVI. 1881, p. 405).

flagellum are subject to slight modifications; the last two, three or four branches on the flagellum diminish in length, the last one or two sometimes a mere tooth or very rudimentary; the terminal simple joints vary from 2 to 7, generally more in the ♀ than in the ♂, the last of all is usually cylindrical and longer than the rest. Westwood's division of the species into two sections based upon the number of branched flagellar joints is useless, and was evidently the result of the examination of a very limited number of specimens. His first section contains two species, *G. vilis* and *cyanea*, the ♂ antennæ of which have the first 15 flagellar joints branched, in the second section the first 12 only. But some species of *G. vilis* have only the first 14, whilst some of *G. bella* have the first 15 branched. However the ♂ antennæ of *G. vilis* (possibly also of *G. cyanea*) certainly differ from those of all others in the direction of the first three branches; the ♂ forceps also exhibits a considerable difference.

The thorax is large; collare moderately devoloped. Legs tolerably strong, more particularly the hind pair; tibiæ spurred; empodia distinct; ungues smooth. Abdomen broader in ♀ than the ♂; the last two or three segments in ♂ usually somewhat broader than the preceding, the forceps usually narrowed; the abdomen in ♂ of *G. vilis* and *G. flavipennis* is comparatively longer and more cylindrical than in the other species; the second to fifth or sixth segments are narrowed in *G. melanopyga* and *G. bimaculata*; base of abdomen only slightly narrower in *G. bella* and *G. viridis*. The male forceps (Pl. xxiv., figs. 65-70) consists of a pair of short, fleshy, basal pieces armed usually with a single claw-shaped horny appendage; in *G. melanopyga* this appendage differs from the others in being more blunt and tridentate at the extremity; whilst the forceps of *G. vilis* departs considerably from the common type in being armed with three claw-shaped appendages, one of which is a fixture and another minutely bidentate at the end The visible appendages of the internal apparatus are variable. I have seen what I take to be the membranous opercule mentioned by Macquart (Dipt. Exot. I. p. 43) in only one species,

G. bella; it is also present in *G. annulata*, according to Baron Osten-Sacken. The ♀ ovipositor is broad at the base, the upper valves long, curved, and the lower ones shorter and straight.

The venation is not subject to very great variation. The auxiliary vein joins the costa more or less opposite the inner end of the second sub-marginal cell, rarely opposite that of first sub-marginal; the sub-costal cross-vein is close by its tip. The first longitudinal vein joins the costa usually a little beyond the middle of the anterior branch of second longitudinal vein; the marginal cross-vein situated about its length distant from the tip of the first longitudinal vein is usually opposite the middle of the anterior branch of the second. The præfurca is moderately long, more or less arcuated at its base. Second sub-marginal cell slightly longer than the first, the petiole of the latter more or less the length of marginal cross-vein; the anterior branch of second longitudinal vein arcuated at its base, then curved gently upwards, and about twice the length of posterior branch which is gently curved downwards. Inner ends of second sub-marginal and discal cells usually opposite one another; the small cross-vein a short distance beyond; in *G. flavipennis* the small cross-vein is extremely small or entirely obsolete so that the inner ends of the second sub-marginal and discal cells form almost a right angle with one another. There are five posterior cells in all but one species, *G. jucunda*, O.-Sacken. The second posterior cell in the former case, varies from one-half to two-thirds the length of the third posterior; the third and fourth posterior cells of equal length or the latter somewhat longer. Discal cell closed, usually not more than twice longer than broad; the great cross-vein usually about opposite its middle, but near its inner end in *G. flavipennis*. Sixth longitudinal vein slightly and seventh distinctly sinuated. The wings (Pl. XXIII., figs. 30-42) more or less completely banded transversely with brown; except for stigma they are immaculate in *G. flavipennis*.

Schiner's *Cloniophora* and Thomson's *Cœnarthria* are *Gynoplistiæ;* the difference in the antennæ being only of specific importance. The species which seem to differ most from the rest are *G. vilis*, Walk., and the extra-Australian *G. jucunda*, O.-Sack.

The *Gynoplistiæ* frequent flowers; their young stages are unknown.

366. Gynoplistia vilis, Walker. (Pl. xxiii., fig. 30).

Ctenophora vilis, Walk., Ent. Mag. II. p. 469, 1835; *Gynoplistia vilis*, Westwood, Lond. and Edin. Phil. Mag. VI. p. 280, 1835; *G. nervosa*, Westw., Zool. Journ. V. No. 20, p. 447, pl. xxii. figs. 10-11; *G. flavitarsis*. Macquart, Dipt. Exot. 4th Suppl. p. 12, t. 1, fig. 2, 1850; *G. vilis*, Westw., Trans. Ent. Soc. 1881, p. 369, pl. xviii. f. 6.

♂.—Length of antennæ.....	0·180 inch	...	4·56 millimètres.
Expanse of wings.....	0·410 × 0·100	...	10·41 × 2·54
Size of body.....	0·500 × 0·060	...	12·70 × 1.54
♀.—Length of antennæ.....	0·090 inch	...	2·27 millimètres.
Expanse of wings.....	0·410 × 0·100	...	10·41 × 2·54
Size of body.....	0·520 × 0·060	...	13·20 × 1·54

Head with a greyish or yellowish-grey bloom; rostrum, palpi and antennæ black or deep brown, the first joint of palpi and first five (sometimes only the two basal) joints of antennæ testaceous; the antennæ 18- or 19-jointed in both sexes; in ♂ the first 14 or 15 flagellar joints rather elongate with a long branch, last two or three branches becoming shorter; the remaining two or three joints sub-cylindrical; in ♀ the first 11 or 12 flagellar joints with very short sub-equal branches, the last two or three branches usually very short, terminal joint elongate, cylindrical; in both sexes the first three branches directed outwards. Thorax with a greyish or yellowish-grey bloom (the ground-colour deep brown or black), with more or less distinct traces of three brown or brownish longitudinal stripes meeting in front of suture; a lateral brown stripe from anterior margin to origin of wings; pleuræ with a grey bloom. Halteres ochreous-yellow with infuscated club. Abdomen brown, sometimes deep brown; the second to fourth segments more or less deeply bordered anteriorly, and all the

segments slightly laterally, with ochreous; sometimes the fifth segment, or even also the third and fourth, entirely ochreous or brownish-ochreous; venter brownish-ochreous or brownish, sometimes the last segment entirely dark brown; ♂ forceps ochreous-brown or light brown, armed with two outer movable, and one inner fixed, claw-like appendages (Pl. xxiv., fig. 65); ovipositor ochreous-brown, more or less reddish, upper valves elongated, slightly curved, lower valves shorter. Coxæ fulvous or light brown, covered with a grey bloom. Femora somewhat obscure fulvous or testaceous, with a broad black ring at apex; genua pale; tibiæ obscure fulvous or testaceous at basal half, gradually darkening into black towards apex; tarsi black, in the hind feet the metatarsal joints ochreous-yellow, with a black ring at the apex.* Wings with a brownish tint, with two dark brown spots; first spot small, squarish, at origin of second longitudinal vein, the second running obliquely from costa (at stigma, which it envelopes) to small cross-vein or the inner end of discal cell; veins dark brown. Auxiliary vein reaching costa opposite or beyond inner end of second sub-marginal cell; sub-costal cross-vein a little before its tip, obliquely situated; marginal cross-vein indistinct (owing to stigma) situated a distance equal to twice its length from tip of first longitudinal; tip of first longitudinal vein opposite middle of anterior branch of second longitudinal; præfurca a little arcuated at its base, straight, tolerably long; petiole of first sub-marginal cell short, about half the length of stigma; anterior branch of second longitudinal almost straight, reaching costa nearly mid-way between tip of first longitudinal and that of posterior branch of second longitudinal; the latter branch slightly arcuated posteriorly towards its tip; second posterior cell two-thirds the length of third posterior; discal cell longer than wide, the great cross-vein at or rather beyond its middle; seventh longitudinal vein sinuated.

Hab.—Tasmania (Macquart); Sydney and other localities in N.S.W. (Masters and Skuse). Three ♂ and three ♀ specimens.

* Macquart says "les deux premiers articles des postérieurs d'un jaune pâle."

367. Gynoplistia cyanea, Westwood. (Pl. xxiii., fig. 31).

Gynoplistia cyanea, Westw., Lond. and Edin. Phil. Mag. VI. p. 280, 1835; Macquart, S. à B. II. Suppl. p. 649; Westw., Trans. Ent. Soc. III. p. 370, 1881.

♀.—Length of antennæ..... 0·125 inch ... 3·16 millimètres.
Expanse of wings..... 0·430 × 0·120 ... 10·92 × 3·04
Size of body..... 0·500 × 0·075 .. 12·70 × 1·89

Head black, with a reflection which is almost imperceptibly bluish. Rostrum, palpi and antennæ brown; the latter 2-+17-jointed; flagellar joints 1-8 with a short obtuse branch, the branches gradually diminishing in length, that on the eighth flagellar joint very short; the next joint with a very small projection on inner side; remaining eight joints elliptical, gradually becoming narrower. Collare dark brown. Thorax black, somewhat shining; pleuræ and coxæ pruinose; scutellum and metanotum dark brown, nearly black. Halteres brown, stem lighter. Abdomen deep violaceous, the first two or three segments with a brownish tinge, shining; ovipositor brown. Trochanters, femora and tibiæ obscure testaceous-brown, fuscous at the apex; tarsi fuscous. Wings with a brownish tint, and all the veins clouded; tinted with testaceous-brown between first longitudinal vein and costa (except at extreme base); and having two fuscous sub-costal spots; a small one at base of second longitudinal vein, and a larger one from inner end of stigma to inner end of discal cell; veins and stigma fuscous. Auxiliary vein reaching costa slightly before inner end of second sub-marginal cell; sub-costal cross-vein situated immediately before tip; marginal cross-vein scarcely discernible, situated a little before tip of first longitudinal vein; petiole of first sub-marginal cell extremely short; posterior branch of second longitudinal vein arcuated upwards at the tip; second posterior cell $\frac{2}{3}$ the length of third posterior cell; small cross-vein less than half the length of basal portion of third longitudinal vein; great cross-vein situated immediately before middle of discal cell.

Hab.—New Holland (Westwood) ; Tasmania (Masters).

Obs.—I have no doubt that the above-described is the ♀ of *G. cyanea*, Westw. Westwood states that this species appears to be very closely allied to *Limnophila metallica*, Sch., but the latter is a very different insect as can be seen both from Dr. Schiner's and my description. It would be interesting to know if the male has the three first branches of the flagellar joints directed outwards ; Westwood places this species in the same section with *G. vilis*.

368. Gynoplistia obscurivena, sp.n. (Pl. xxiii., fig. 32).

♀.—Length of antennæ.....	0.090 inch ...	2·27 millimètres.
Expanse of wings.....	0·380 × 0·100 ...	9·64 × 2·54
Size of body.....	0·460 × 0·060 ...	11.70 × 1·54

Head black, somewhat shining, densely clothed with black hairs ; rostrum, palpi, and antennæ black, the latter 19-jointed ; first 9 flagellar joints with a short branch, the first and last one or two shorter ; tenth flagellar joint sometimes with a slight projection on inner side ; remaining seven joints sub-elliptical, the terminal one more elongate. Collare dark brown. Thorax black, shining ; pleuræ and coxæ with a greyish bloom. Halteres brown or black. Abdomen shining violaceous, incisions of the first two or three segments sometimes tinged with, or even the second to fifth segments entirely reddish-fulvous ; ovipositor entirely reddish-fulvous, the valves slender, slightly arcuated. Legs black, the femora reddish-fulvous, with a broad ring of black (more than $\frac{1}{3}$ the length of femora) at apex. Wings yellowish at base, with three brownish spots, the apex of wing and all the veins infuscated with paler brownish ; first spot filling basal ends of basal cells, the second oblong, enveloping basal half of præfurca and not quite reaching posteriorly to fourth longitudinal, third cloud irregularly roundish, extending from costa (at stigma) to inner end of discal cell ; costal cell brown ; apex of wing clouded from inner end of second posterior cell ; veins dark brown.

Auxiliary vein reaching costa opposite inner end of second sub-marginal cell; sub-costal cross-vein near its tip; marginal cross-vein rather indistinct, about its length distant from tip of first longitudinal vein; præfurca moderately long, arcuated at its origin; petiole of first sub-marginal cell very short; anterior branch of second longitudinal vein usually slightly sinuose, about half the length of posterior branch, reaching costa beyond tip of first longitudinal a distance about half the length of stigma; posterior branch arcuated slightly upwards at the extreme tip; second posterior cell more than half the length of third posterior; discal cell longer than wide, the great cross-vein opposite its middle; seventh longitudinal vein sinuated.

Hab.—New South Wales (Masters). Three specimens.

Obs.—Closely allied to *G. cyanea*, but easily distinguished by the wing-markings, etc.

369. Gynoplistia bella, Walker. (Pl. xxiii., fig. 33).

Ctenophora bella, Walk., Ent. Mag. II., p. 470, 1835; *Gynoplistia bella*, Westwood, Lond. and Edin. Phil. Mag. VI. p. 280, 1835; *G. variegata*, Westw., Zool. Journ. V. No. 20, 448, pl. xxii., figs. 12, 13; Macquart, Dipt. Exot. I. p. 44, t. iii. f. 1a, 1838; Suppl. i. p. 10, 1846, t. i. f. 5; *Variegata gymnoplistioïdes*, Bigot, Ann. Soc. Ent. Fr. 1884, p. 456. *Gynoplistia elegans*, Walk., Ins. Saund. i. Dipt. p. 447, 1856; *G. variegata* Schiner, "Novara" Exp. Dipt. 1868, p. 39; *G. bella*, Westw., Trans. Ent Soc. Lond. 1881, p. 370.

♂.—Length of antennæ..... 0·120 inch ... 3·04 millimètres
Expanse of wings..... 0·330 × 0·090 ... 8·37 × 2·27
Size of body .... 0·360 × 0·060 ... 9·14 × 1·54

♀.—Length of antennæ..... 0·110 inch ... 2·79 millimètres.
Expanse of wings..... 0·440 × 0·120 ... 11·17 × 3·04
Size of body..... 0·440 × 0·090 ... 11·17 × 2·27

Head black, somewhat shining, clothed with black hairs; rostrum, palpi, and antennæ black, the two basal joints of the latter sometimes fulvous; ♂ antennæ 18- or 19-jointed, the first 13 or 14 flagellar joints* with long branches, decreasing in length from eighth or ninth joint, the fourteenth, when present, a mere tooth; last three or four joints elongate-elliptical, the terminal one usually elongate-cylindrical; ♀ 17- or 18-jointed, the first 9 or 10 flagellar joints with short branches, decreasing in length from sixth or seventh joint, the tenth, when present, very rudimentary; last five or six joints more or less elliptical, the terminal one usually elongate; in both sexes the first two branches directed outwards. Thorax deep black, slightly shining, with three longitudinal narrow stripes of greyish-yellow bloom or microscopic pubescence (visible only at a certain obliquity) from anterior border to transverse suture, also two large distinct sub-triangular yellow spots of similar character to stripes immediately below the humeri; pleuræ and coxæ with a grey, almost hoary, bloom. Halteres black. Abdomen reddish-fulvous, the first and last two or three segments deep black; genitalia reddish-fulvous; ♂ forceps (Pl. xxiv., fig. 66) armed with a single, somewhat hooked, appendage; ♀ ovipositor rather long, slightly curved. Coxæ and tarsi deep black; femora fulvous or reddish-fulvous, with a broad ring of black at the apex; tibiæ black, the basal half (except a ring of black at base), more or less fulvous or reddish-fulvous. Wings slightly tinted with yellowish, the basal portions more fulvous (but black at the origin), with three blackish (in fresh specimens) or dark brown equidistant, irregular fasciæ, and the costal cell and apex (from inner end of second posterior cell) clouded with a somewhat lighter blackish or brown, the posterior margin slightly clouded with greyish; the first fascia not nearer base of wing than humeral cross-vein, sometimes interrupted in the axillary cell and at posterior margin, connected to next fascia by a vitta filling the intervening portion of anal

*Sometimes the fifteenth flagellar joint also has a very rudimentary tooth of a branch.

cell; second fascia of about equal width to first, from origin of second longitudinal to tip of seventh longitudinal, subject to more or less complete interruptions in both the basal cells and at posterior margin, and connected to third fascia by a vitta more or less completely filling upper half of intervening portion of second basal cell; third fascia a little broader than the others, extending from costa, at stigma, across discal cell, to lower extremity of great cross-vein; the centre of discal cell usually clear. Auxiliary vein reaching costa opposite or somewhat beyond inner end of second sub-marginal cell (sometimes opposite inner end of first sub-marginal); sub-costal cross-vein near its tip; marginal cross-vein indistinct, about twice its length distant from tip of first longitudinal and joining anterior branch of second longitudinal vein at the middle; præfurca nearly straight, moderately long, arcuated or even angulated at its origin; petiole of first sub-marginal cell very short, sometimes less than length of marginal cross-vein; anterior branch of second longitudinal vein considerably arcuated at its base, about half the length of posterior branch, reaching costa beyond tip of first longitudinal a distance equal to about half the length of stigma; posterior branch arcuated slightly upwards at the extreme tip; second posterior cell somewhat more than half the length of third posterior; discal cell longer than wide, the great cross-vein opposite its middle; sixth longitudinal vein slightly and seventh distinctly sinuated.

Hab.—Apparently generally distributed in Australia. Common.

Var. β.—Two ♂ specimens have the apex of wings only slightly infuscated; the forceps and last two abdominal segments black; and the tibiæ brown with the base and apical half black.

Hab.—Tasmania (Masters).

Var. γ,—A ♀ specimen has only the first and last abdominal segments black, and black tibiæ.

Hab.— King George's Sound, Western Australia (Masters).

Var. δ.—A ♂ specimen has the forceps and next preceding segment black, and the hind tibiæ brown at base and apex.

Hab.—King George's Sound (Masters).

Obs.—I have found this species most abundant about Sydney from August to November. There are more than one hundred specimens before me for comparison.

370. Gynoplistia Westwoodi, sp.n. (Pl. xxiii. fig. 34).

♀.—Length of antennæ.....	0·135 inch	...	3·42 millimètres.
Expanse of wings.....	0·520 × 0·140	...	13·20 × 3·35
Size of body.....	0·500 × 0·090	...	12·70 × 2·27

Head black, somewhat shining, with black hairs; rostrum, palpi, and antennæ black, the first basal joint of latter sometimes brownish; the antennæ 18- or 19-jointed, the first 10 or 11 flagellar joints with short branches, decreasing in length from seventh or eighth joint, the eleventh, when present, a mere tooth; first two branches directed outwards; last six joints more or less elliptical, the terminal one usually elongate. Thorax black, shining; pleuræ and coxæ with a greyish or greyish-yellow bloom, the latter covering a brownish-fulvous spot mid-way between origin of wings and collare. Halteres brownish, with a black club. Abdomen reddish-fulvous, the first segment and last three violaceous-black, also violaceous-black spots laterally on the third to fifth segments; ovipositor entirely reddish-fulvous, the valves long, slightly curved. Coxæ and tarsi black; femora and tibiæ fulvous or reddish-fulvous, with a ring of black at the apex (that on the former the broader). Wings with a slightly yellowish tint, the basal portion fulvous, with three brown equidistant spots or abbreviate fasciæ, also the costal cell tinted with yellow or very pale brownish, and the apex of wing (from inner end of second posterior cell); fourth (except anterior branches) to seventh longitudinal vein, and both ends of discal cell and great cross-vein, more or less infuscated with brownish; generally distinct cloud-streaks about middle of sixth and seventh longitudinal veins; first wing-spot filling basal portions of the two basal cells, second squarish, filling portion of first basal cell at origin of

second longitudinal, third the largest, irregularly rounded, extending from costa (at stigma) to inner end of discal cell. Auxiliary vein opposite or somewhat beyond inner end of second sub-marginal cell, sub-costal cross-vein near its tip; marginal cross-vein indistinct, about its length distant from tip of first longitudinal vein and opposite middle of anterior branch of second longitudinal vein; præfurca arcuated at the base, moderately long; petiole of first sub-marginal cell very short, rather longer than marginal cross-vein; anterior branch of second longitudinal vein arcuated at the base, somewhat sinuated, usually less than half the length of posterior branch, joining costa beyond tip of first longitudinal a distance about equal to length of great cross-vein; posterior branch slightly arcuated upwards at extreme tip; second posterior cell more than half the length of third; discal cell longer than wide, the great cross-vein situated before its middle; sixth longitudinal vein slightly and seventh distinctly sinuated.

Hab.—New South Wales (Masters and Skuse). Five specimens.

Obs.—This species is undoubtedly distinct from *G. bella*, to which however it is nearly related. At first glance it can easily be distinguished from *G. bella* by its larger size, less distinctly marked wings, and fulvous tibiæ. The male is unknown to me.

371. Gynoplistia Howensis, sp.n. (Pl. xxiii. fig. 35).

♀.—Length of antennæ..... 0·090 inch .. 2·27 millimètres.
Expanse of wings..... 0·350 × 0·090 ... 8·87 × 1·27
Size of body..... 0·400 × 0·050 ... 10·16 × 1·27

Head very deep metallic blue; rostrum, palpi and antennæ black, the base of rostrum and first two or three antennal joints testaceous-yellow; antennæ 16-jointed, the first 7 flagellar joints with short sub-equal branches, the following two with rudimentary ones; first two branches directed outwards; last five

joints sub-elliptical, the terminal one elongate, twice the length of the penultimate joint. Thorax testaceous or light yellowish-brown, somewhat shining; pleuræ with a grey bloom. Halteres ochreous, the club black. Abdomen deep violaceous-black, with the first two segments testaceous; ovipositor entirely ochreous or light testaceous, the valves slender, slightly curved. Coxæ and femora testaceous, the latter with a black ring at apex; genua pale; tibiæ and tarsi black. Wings with a very pale yellowish tint, more yellow at the base, with a spot and two fasciæ of brown (all equidistant), also costal cell and apex of wing (from inner end of second posterior cell) clouded with brown; the spot filling bases of the basal cells; first fascia extending from origin of second longitudinal to tip of seventh longitudinal vein, interrupted only in the second basal cell; second fascia entire, extending from costa, at stigma, to posterior margin at fifth longitudinal vein; veins dark brown. Auxiliary vein reaching costa opposite inner end of first sub-marginal cell; sub-costal cross-vein opposite inner end of second sub-marginal cell; first longitudinal vein terminating in costa about mid-may between tips of auxiliary vein and anterior branch of second longitudinal; marginal cross-vein indistinct, short, about twice its length distant from tip of first longitudinal, and opposite the middle of anterior branch of second longitudinal vein; præfurca angulated at its origin, of moderate length; petiole of first sub-marginal cell very short; anterior branch of second longitudinal vein angulated at its base, sinuated, about half the length of posterior branch; second posterior cell half the length of the third posterior; discal cell somewhat longer than wide, the great cross-vein at its inner end; sixth longitudinal vein slightly and seventh distinctly sinuated.

Hab.—Lord Howe Island. One specimen.

Obs.—The specimen from which this species is described was, amongst other Diptera, etc., when collected, unfortunately placed in spirit instead of being pinned at once, hence it has greatly suffered in appearance and probably some of the colours have been altered.

372. Gynoplistia melanopyga, Schiner. (Pl. xxiii. fig. 36).

Gynoplistia melanopyga (♂), Sch., Dipt. 'Novara' Exp. Zool. Theil, Bd. ii. p. 39, 1868.

♂.—Length of antennæ.....	0·120 inch ...	3·04 millimètres.
Expanse of wings.....	0·350 × 0·090 ...	8·87 × 2·27
Size of body.....	0·420 × 0·060 ...	10·66 × 1·54

Head shining black, with black hairs; rostrum, palpi and antennæ black; the latter 19- or 20-jointed; the first 12 or 13 flagellar joints with long branches, decreasing in length from the ninth or tenth joint, the thirteenth, when present, a mere rudimentary tooth; last five joints sub-elliptical, the terminal one usually more elongate; the first two branches directed outwards. Thorax black, shining; pleuræ and coxæ with a grey or yellowish-grey bloom. Halteres brown with a black club. Abdomen reddish-fulvous; the first segment and last two or three, including forceps, violaceous-black (the apex of basal pieces of latter slightly reddish-brown); forceps armed with a single, somewhat thick, slightly bent appendage, tridentate at the extremity, and some peculiar appendages of the internal apparatus (Pl. xxiv., fig. 67). Coxæ, tibiæ and tarsi black, except that the hind tibiæ are brownish-fulvous, with a slight black ring at base and a broad one at apex, sometimes also the fore and intermediate pair; femora reddish-fulvous, with a ring of black at apex. Wings with a pale brownish tint, fulvous at base, the apex, costal cell and the posterior veins slightly infuscated; three brown spots; first spot filling bases of basal cells; second squarish, usually slightly smaller than the first, situated at origin of second longitudinal vein; third larger, somewhat roundish, extending from costa, at stigma, to inner end of discal cell. Auxiliary vein reaching costa almost opposite inner end of first sub-marginal cell; sub-costal cross-vein near its tip; first longitudinal reaching costa at a point more than midway between tips of auxiliary vein and anterior branch of second longitudinal vein; marginal cross-vein

rather more than its length distant from tip of first longitudinal and at middle of anterior branch of second longitudinal vein; præfurca moderately long, nearly straight, slightly arcuated at its extreme base; petiole of first sub-marginal cell very short; anterior branch of second longitudinal vein arcuated at its base, very slightly sinuose, about half the length of posterior branch; the latter arcuated upwards at its extreme tip; second posterior cell more than half the length of third posterior; discal cell longer than wide, the great cross-vein situated at middle of its length; sixth longitudinal vein very slightly, and seventh distinctly sinuated.

Hab.—Sydney ("Novara" Exp.); ten specimens (Masters and Skuse).

373. Gynoplistia punctipennis, Westwood.

Gynoplistia punctipennis, Westw., Ann. Soc. Ent. Fr. IV. p. 682, 1835; Trans. Ent. Soc. III. p. 371, 1881.

♀.—"Capite et thorace cinereis; hujus dorso fusco, angulis humeralibus utrinque puncto nigricanti; abdomine fœm. obscure fusco, elongato, stylo rufescenti; alis limpidis, costa tenui, maculisque nonnullis parvis (ad conjunctionem venarum transversarum) alteraque stigmaticali majori fuscis; pedibus longioribus subtestaceis; femoribus tibiisque ad apicem fuscis, tarsorum articulis 2-4 albidis; antennis fœm. fuscis, basi pallidioribus, 16 ?-articulatis, articulis 3-8 interne acute productis, vix ramosis. Long. corp. 7 lin. Exp. alar. 12 lin.

Hab.—Nova Hollandia. In Mus. Hopeiano Oxoniæ."

374. Gynoplistia bimaculata, sp.n. (Pl. xxiii., fig. 37).

♂.—Length of antennæ..... 0·150 inch ... 3·81 millimètres.
Expanse of wings..... 0·360 × 0·100 ... 9·16 × 2·54
Size of body..... 0·380 × 0·060 ... 9·64 × 1·54

Head black, somewhat shining, with black hairs; rostrum, palpi, and antennæ black, the latter 20-jointed; first 12 flagellar

joints with long branches, the last three or four branches a little decreasing in length; first two branches directed outwards; the last six joints elliptical, the terminal one narrow, elongate, cylindrical. Thorax black, shining, with yellowish hairs; pleuræ with greyish or yellowish-grey bloom. Halteres brown with black club. Abdomen reddish-brown (or mahogany colour) with a slightly cupreous appearance, densely clothed with yellowish pubescence, the first segment deep violaceous-black; forceps (Pl. xxiv., fig. 68) concolorous with rest of abdomen, armed with a single claw-shaped appendage. Coxæ black, with a hoary bloom. Femora fulvous or reddish-fulvous, with a broad ring of deep brown or black at the apex; tibiæ obscure testaceous, deep brown at extreme base and (more so) at the tip; tarsi deep brown. Wings with a pale brownish tint owing principally to cloudings on nearly all the veins; marked with two brown spots; costal cell and apex of wing pale brownish; first brown spot squarish, situated at origin of second longitudinal vein, the second larger, extending from costa, at stigma, to inner end of discal cell; veins dark brown. Auxiliary vein reaching costa opposite inner end of second sub-marginal cell; sub-costal cross-vein near its tip; marginal cross-vein situated rather more than its length distant from the tip of first longitudinal vein, and opposite middle of anterior branch of second longitudinal vein; præfurca moderately long, obtusely arcuated at its origin; petiole of first sub-marginal cell short, anterior branch of second longitudinal vein arcuated at its base, and gently bending upwards to the costa, about half the length of posterior branch; the latter bending gently downwards, arcuated upwards at its extreme tip; second posterior cell about two-thirds the length of third posterior; discal cell longer than wide, the great cross-vein at or beyond its middle; sixth longitudinal vein slightly and seventh distinctly sinuated.

Hab.—Berrima, N.S.W. Three specimens.

375. Gynoplistia flavipennis, sp.n. (Pl. xxiii., fig. 38).

♂.—Length of antennæ.....	0·130 inch	..	3·30 millimètres.
Expanse of wings.....	0·350 × 0·090	...	8·87 × 2·27
Size of body.....	0·440 × 0·060	...	11·17 × 1·54
♀.—Length of antennæ.....	0·120 inch	...	3·04 millimètres.
Expanse of wings.....	0·420 × 0·100	...	10·66 × 2·54
Size of body	0·440 × 0 060	...	11·17 × 1·54

Head shining, black, slightly violaceous, with short brownish hairs; rostrum, palpi, and antennæ brown or blackish, the rostrum and first two or three antennal joints more or less brownish-ochreous or even dull testaceous-yellow; ♂ antennæ 19- or 20-jointed, the first 13 flagellar joints with long branches, the last four or five branches decreasing in length; last four or five joints more or less elliptical; in ♀ 18-jointed, the first 10 flagellar joints with short branches, the tenth a mere tooth; remaining six joints more or less elliptical, the terminal one elongate; in both sexes the first two branches directed outwards. Collare deep brown. Thorax black, levigate, with yellowish hairs; scutellum brown; metanotum violaceous-black; pleuræ with a hoary bloom. Halteres brownish-ochreous. Abdomen testaceous to light reddish-brown, shining, the first segment and genital organs deep violaceous-black, the ♀ ovipositor sometimes more brown; ♂ forceps smaller than in *G. bimaculata*, and the terminal claw-shaped appendages more slender and more hooked (Pl. xxiv., fig. 69); ♀ ovipositor slightly curved. Coxæ black, with hoary bloom; trochanters fulvous; femora fulvous, ringed (broadly in hind pair) with brown at the apex; tibiæ obscure testaceous or yellowish-brown, infuscated at the apex; tarsi brown. Wings pellucid, with a pale yellow tint, the origin of præfurca and inner ends of sub-marginal cell sometimes indistinctly infuscated; stigma distinct, rather elongated, brownish; veins dark brown. Auxiliary vein reaching costa opposite middle of petiole of first sub-marginal cell; sub-costal cross-vein near its tip; marginal cross-vein situated rather more than

its length distant from tip of first longitudinal vein and considerably before middle of anterior branch of second longitudinal vein; præfurca moderately long, obtusely arcuated or angulated at its origin; petiole of first sub-marginal cell short, usually longer than marginal cross-vein; anterior branch of second longitudinal vein almost angulated at its base, and bending gently upwards to costa; small cross-vein extremely short or obsolete, so that the discal cell is in contact with second sub-marginal, and forms rather more than a right angle; discal cell nearly twice as long as wide, the great cross-vein near its inner end; sixth longitudinal vein slightly and seventh distinctly sinuated.

Hab.—Upper Hunter, N.S.W. (Masters). Seven specimens.

Obs.—Easily distinguished from all other species by its spotless wings. A very distinct species, evidently most allied to the last, *G. bimaculata.*

376. Gynoplistia viridis, Westwood. (Pl. xxiii. fig. 39).

Gynoplistia viridis, Westw., Lond. and Edin. Phil. Mag. 1835 (?); Macquart, Dipt. Exot. I. p. 44, pl. 3, f. 1, 1838; *Cœnarthria viridis*, Thomson, Dipt. 'Eugenia' Exp. p. 446, pl. 9, f. 1, 1868.

♂.—Length of antennæ.....	0·100 inch	...	2·54 millimètres.
Expanse of wings.....	0·250 × 0·070	...	6·34 × 1·77
Size of body.....	0·270 × 0·050	...	6·85 × 1·27

Head æneous-green, nitidous. Rostrum, palpi, and antennæ brown, the latter 16-jointed; joints of scapus sometimes obscure testaceous; first 10 flagellar joints with a simple branch, the last three branches diminishing in length; eleventh usually with a slight projection, sometimes also twelfth, more rarely the eleventh with even a short branch; first two branches directed outwards; terminal joints elliptical, about equal in length. Thorax æneous-green, slightly chalybeous anteriorly, nitidous; pleuræ griseo-pruinose. Halteres fulvous-yellow. Abdomen reddish-ochraceous,

the first and last three segments (including genitalia) violaceous-black, cupreous; sub-nitidous, sub-glabrous (Pl. xxiv. fig. 70, forceps). Coxæ griseo-pruinose. Femora and tibiæ fulvous, with a short ring of obscure fuscous at apex; tarsi obscure fuscous; metatarsal joint usually brownish towards base. Wings pellucid, somewhat yellowish, especially at base, more or less tinted with very pale brownish on basal half; with one indistinct and two distinct fuscous spots; first filling inner ends of the basal cells, second, a small squarish spot at origin of second longitudinal vein; the third larger, extending from costa to inner end of discal cell; fifth longitudinal vein infuscated; veins and stigma fuscous. Auxiliary vein appearing to either reach costa or first longitudinal vein slightly before inner end of second sub-marginal cell; sub-costal cross-vein blurred, situated immediately before tip; marginal cross-vein indistinct or scarcely visible, short, situated a little before tip of first longitudinal vein; anterior branch of second longitudinal vein angulated near its base; præfurca rather angulated at its origin; petiole of first sub-marginal cell short; second sub-marginal cell very little longer than first posterior cell; second posterior cell not half the length of third posterior cell; small cross-vein not half the length of basal portion of third longitudinal vein; great cross-vein joining at or immediately before middle of discal cell.

Hab.—Sydney (Eugenia Exp.); Sydney and Tasmania (Masters). Four specimens.

Var. β. Abdomen with first two and last four abdominal segments violaceous-black. Legs entirely obscure fuscous, except rather more than basal half of femora fulvous. Basal half of wing not so distinctly tinted with pale brownish; the two costal spots more distinct, and with a third oblong paler one filling basal portion of the two basal cells. In other respects exactly like the above.

Hab.—Blue Mountains, N.S.W. (Masters). One specimen.

Obs. 1. Macquart attaches Westwood's name to the above, but this latter author does not even refer to this species in his sum-

mary of Exotic Tipulidæ (Trans. Ent. Soc. Lond. 1881, p. 363). I have not seen Westwood's original description; there may be some mistake. However, from careful comparison of specimens with Macquart's and Thomson's descriptions, I cannot help concluding that both refer to the same species. Thomson himself notices the great resemblance of his species to *G. viridis*, Westw., with which he compares it.

Obs. 2. The above-described is undoubtedly *Cœnarthria viridis*, Thoms. The species has no claims to be separated from *Gynoplistia*.

Obs. 3. Macquart gives the description of the ♀ of *G. viridis*, Westw., which corresponds with an old damaged specimen of this sex before me, obtained by Mr. Masters in Tasmania. The lateral borders of the segments are dark coppery, and the ovipositor is fulvous. The male does not differ from Sydney specimens.

B. *Tibiæ with a pale ring.*

377. Gynoplistia annulata, Westwood. (Pl. xxiii. fig. 40).

G. annulata, Westw., Lond. and Edin. Phil. Mag. VI. p. 280, 1835; Macquart, S. à B. II. Suppl. p. 650; Westw., Trans. Ent. Soc. III. p. 371, 1881, pl. xviii. fig. 7; O.-Sacken, Mon. Dipt. N. Amer. IV. p. 329, 1869; Studies, II., p. 211, 1887.

♀.—Length of antennæ.....	0·110 inch	...	2·79 millimètres.
Expanse of wings.....	0·420 × 0·140	...	10·66 × 3·55
Size of body.....	0·420 × 0·085	...	10 66 × 2·14

Head black. Rostrum, palpi, and antennæ dark brown, the latter 17-jointed; flagellar joints 1-9 with a short obtuse branch, gradually becoming longer to the fifth or sixth joint, from thence diminishing in length; tenth joint with a small projection on the inner side; first two branches directed almost outwards; terminal joint elongate, more than twice the length of the one next before it, appearing as if made up of three compressed joints. Entire

thorax, coxæ, and trochanters fulvous, opaque. Halteres black. Abdomen black, densely covered (sparingly on venter and first superior segment) with very pale yellowish sericeous hairs; ovipositor brown. Legs brown; tibiæ ringed with white in the middle, the ring on the fore pair narrow and somewhat blurred; tarsi with the first joint fulvous at the base. Wings fuscous; veins brown; stigma slightly darker than wing-membrane. Auxiliary vein joining first longitudinal vein opposite inner end of second sub-marginal cell; marginal cross-vein situated about midway between tip of auxiliary vein and tip of first longitudinal; inner end of first sub-marginal cell immediately beyond inner end of second sub-marginal; small cross-vein nearly half the length of basal portion of third longitudinal vein; second posterior cell rather more than half the length of third posterior; great cross-vein joining at middle of discal cell.

Hab.—Near Sydney, N.S.W. (Masters). A single specimen.

Obs.—Westwood described the above as a N. American insect, and Baron Osten-Sacken (Mon. Dipt. N. Amer. I. p. 13, 1862), doubted the probability that the locality given was the correct one. The describer points out that "the label attached to the type specimen in the Oxford Museum is in the hand writing of Mr. Hope, and is clearly written N.A." Since the insect has only been found in Australia we must conclude that Hope meant N. Australia and not N. America by the letters on the label.

378. Gynoplistia Macquarti, sp. n.

Gynoplistia Macquarti n.nov. for *G. cyanea (præoc.)* Macquart, Dipt. Exot. 4th Suppl. p. 13, 1850.

"♀.—*Cyanea nitida. Pedibus nigris; femoribus basi rufis; tibiis posticis annulo albo. Alis fusco-maculatis.*"

Body of a blackish violet-blue, shining, with slight green reflections. Rostrum, proboscis, palpi and antennæ black. Pleuræ with a white down. Abdomen with tawny oviduct.

Femora with anterior half tawny ; the yellowish-white ring of the posterior tibiæ situated a little beyond the middle. Halteres tawny. Wings clear, with two spots and extremity brown ; the spots to exterior margin, the first at base of marginal vein, not extending beyond the externo-median ; the second at base of submarginal vein, extending to the discoidal cell ; the cross-veins slightly bordered with brown ; the venation as in *G. variegata (G. bella*, Walk.). Long. 5 × 1.

Hab.—Tasmania.

Obs.—I am compelled to re-name this species, *cyanea* having been used by Westwood for another species in 1835. The above (judging by descriptions only) seems to much resemble *G. apicalis*, Walk., from the same locality.

379. Gynoplistia viridithorax, sp.n. (Pl. xxiii., fig. 41).

♀.—Length of antennæ..... 0·100 inch ... 2·54 millimètres.
Expanse of wings..... 0·380 × 0·110 ... 9·64 × 2·79
Size of body..... ..... 0·440 × 0·070 ... 11·17 × 1·77

Head deep metallic shining green ; sparsely clothed with short hairs ; rostrum, palpi and antennæ black ; the latter 17-jointed ; first 8 flagellar joints with short branches, first two directed not quite outwards, the last one a mere tooth ; next six joints elliptical ; the terminal joint elongate. Thorax deep metallic shining green, with slight bluish reflections ; pleuræ with an oblique hoary stripe, directed to intermediate coxæ ; scutellum tinged with brown. Halteres testaceous-brown. Abdomen rather dark reddish-fulvous, shining, almost cupreous ; the first two segments entirely, and the following five more or less distinctly bordered laterally with violaceous-blue ; ovipositor concolorous with abdomen, the valves long, slightly curved. Coxæ black, hoary ; trochanters brown ; femora fulvous or testaceous, more or less brownish at apex ; tibiæ brown, paler at base, and becoming black towards apex, with a whitish or pale yellowish ring just beyond middle ; tarsi black. Wings subhyaline, with a very pale yellowish tint, and two brown spots ;

first spot small, square, at origin of second longitudinal vein, the second an abbreviated irregular fascia, extending from costa, between tips of auxiliary and first longitudinal veins (where it is broadest), to lower end of a small cross-vein; veins black or deep brown; the veins closing each end of discal cell and the great cross-vein slightly infuscated. Auxiliary vein reaching costa beyond inner end of second sub-marginal cell; sub-costal cross-vein near its tip; marginal cross-vein almost invisible, situated about twice its length distant from tip of first longitudinal vein, and opposite one-third the length of anterior branch of second longitudinal; præfurca obtusely angulated at its origin, the remainder straight; petiole of first sub-marginal cell short, as long as great cross-vein; anterior branch of second longitudinal vein a little arcuated at its base, gently curved upwards, half the length of posterior branch; the latter almost straight, slightly arcuated upwards at its extreme tip; second posterior cell two-thirds the length of the third posterior; discal cell longer than wide, the great cross-vein about opposite its middle; sixth longitudinal vein slightly and seventh considerably sinuated.

Hab.—Moonbar, Monaro, N.S.W., 3-3500 feet (Helms). March; *one specimen in Coll. Australian Museum.*

380. Gynoplistia apicalis, Walker.

Gynoplistia apicalis, Saund. MSS. In Ins. Saund. by Walker, Vol. I. Dipt. p. 447, 1856.

"♂ and ♀.—*Nigro-cyanea; antennæ et pedes nigra; pectus albidum; abdomen apice luteum; femora basi lutea; tibiæ posticæ albo fasciatæ; alæ limpidæ, fasciis fuscis, venis nigris basi luteis; halteres testacei.*"

"Blackish blue. Antennæ and legs black. Pectus whitish. Abdomen luteous at the tip. Femora luteous towards the base; hind tibiæ with a white band. Wings limpid, with three dark brown spots along the costa, and with two paler brown spots in

the disk; tips brown; veins black, luteous at the base. Halteres testaceous. Length of the body, 4-4½ lines; of the wings, 10 lines.

"Van Diemen's Land."

381. Gynoplistia fumipennis, Walker.

Gynoplistia fumipennis, Saund. MSS. In Ins. Saund. by Walker, Vol. I. Dipt. p. 448, 1856.

"♀. *Atra; pectus canescens; femora basi testacea; tibiæ posticæ fascia subapicali alba; alæ nigricantes.*"

"Deep black. Pectus somewhat hoary. Femora testaceous towards the base; hind tibiæ with a white band towards the tip. Wings blackish; veins black. Length of the body, 5 lines; of the wings, 9 lines."

"Van Diemen's Land."

382. Gynoplistia chalybeia, sp.n. (Pl. xxiii., fig. 42).

♂.—Length of antennæ.....	0·075 inch ..	1·89 millimètres.
Expanse of wings.....	0·210 × 0·055 ...	5·33 × 1·39
Size of body.....	0·210 × 0·040 ..	5·33 × 1·01

Head deep metallic shining blue, clothed at the back with black hairs; rostrum, palpi and antennæ black; the latter 16-jointed; first 10 flagellar joints with tolerably long branches; first two branches directed outwards; the last three decreasing in length; next three simple joints sub-elliptical; the terminal joint cylindrical. Thorax deep metallic shining blue; pleuræ with a hoary bloom. Halteres light fulvous. Abdomen deep shining violaceous-blue; forceps black. Legs black; femora fulvous for less than the basal half; hind tibiæ with a broad whitish ring just beyond the middle. Wings hyaline, with three spots; the costal cell and apex of wing clouded with brown, also a small faint greyish clouding in anal angle, another larger between tip of seventh longitudinal and the fifth longitudinal vein, and a third filling basal

half of fifth posterior cell and extending along the cross-veins; the first brown spot filling basal portion of the two basal cells, second about equal to last, at origin of second longitudinal vein; the third the largest, roundish, extending from costa, at stigma, to discal cell; veins deep brown or black. Auxiliary vein reaching costa about opposite inner end of second sub-marginal cell; subcostal cross-vein close to its tip; marginal cross-vein indistinct, about its length distant from tip of first longitudinal vein and opposite middle of anterior branch of second longitudinal; præfurca obtusely angulated at its origin, running in one straight line with the petiole and posterior branch of second sub-marginal cell; the latter petiole very short, equal to marginal cross-vein; anterior branch of second longitudinal angulated at its origin, about half the length of posterior branch and almost as long as præfurca; posterior branch slightly arcuated upwards at its extreme tip; second posterior cell rather shorter than the third; discal cell rather longer than wide, the great cross-vein somewhat before its inner end; sixth longitudinal vein slightly and seventh distinctly arcuated.

Hab.—Mount Kosciusko, N.S.W., 5000 ft. (Helms). March; *one specimen in Coll. Australian Museum.*

Obs.—Differs from *G. Macquarti* and *G. apicalis* principally in being only half the size, and the abdomen not being fulvous at the extremity; apparently most like *G. apicalis* as regards wing-spots.

Genus 24. Cerozodia, Westwood.

Cerozodia, Westw., Lond. and Edin. Phil. Mag. VI. p. 281, 1835; *Ozocera*, Westw., Zool. Journ. V. p. 449, pl. xxii. f. 5, antennæ (nec *Ozodicera*, Macq.); *Cerozodia*, Westw. Trans. Ent. Soc. Lond. 1881, p. 379; Osten-Sacken, Studies II. p. 211, 1887.

"*Limnobiæ* affinis. Alarum venæ ut in *Gynoplistia nervosa* * (fig. 10) depositæ. Antennæ, thorace longiores 32-articulatæ;

* *Gynoplistia vilis*, Walk.

articulis 3tio ad 31mum ramulum longissimum gracilem pilosum e basi emittentibus (fig. 5); oculi maris maximi interne lunati, subtus fere conniventes. Palpi perbreves 3-articulati, articulo 1mo minuto, 2do majore subovato, 3tio paullo majori, spatuliformi. Thorax ovato-rotundatus. Abdomen maris longum cylindricum, unguibus duobus terminatum" (Westwood).

"Rostrum not longer than the head; palpi rather long (Westwood says: palpi perbreves?); as far as I can see, the last joint is not longer than the others. Thorax small compared to the length of the abdomen; the latter narrow, of equal breadth, very slightly broader at the forceps; the forceps seem to have the same structure as in *Gynoplistia*.. Legs comparatively stout; tibiæ with spurs; empodia present. Wings: venation like that of *Gynoplistia*, with the exception in the course of the auxiliary vein (which ends in the first vein); first sub-marginal cell rather long, its proximal end but little distant from proximal end of the second sub-marginal; the second posterior with a long petiole; the great cross-vein near the middle of the discal cell" (Osten-Sacken).

Obs.—This form is quite unknown to me. Baron Osten-Sacken has seen the two original specimens from which the above was drawn, enumerates additional characters of the genus, and moreover describes another species (Studies II. p. 213) from New Zealand. In a ♂ specimen of the latter in the possession of Baron Osten-Sacken the antennæ are 39-jointed, whilst in another of the same sex in the Berlin Museum the antennæ are 36-jointed. Towards the tip of the antennæ the branches and joints both seem to be liable to modifications similar to those observed amongst the closely allied *Gynoplistiæ*.

383. Cerozodia interrupta, Westwood.

Cerozodia interrupta, Westw., Lond. and Edin. Phil. Mag. VI. p. 281, 1835; Zool. Journ. V. p. 449, pl. xxii. fig. 5, antenna, 1835; Trans. Ent. Soc. Lond. 1881, p. 379, pl. xix. f. 13; Osten-Sacken, Studies II. p. 213, 1887.

"Pallida, ochracea, thorace sub-obscuriore; oculis nigris; antennarum ramulis pallide fuscis; alis pallidis venis sub-fuscis, linea gracili interrupta cinerea per areolam elongatam sub-costalem currente" ("this means the first basal cell," Osten-Sacken).

Hab.—Swan River, Western Australia. Hopean Mus. Oxford.

Obs.—Length 21 mm.; the number of antennal joints is 32 (Osten-Sacken).

Section V. ANISOMERINA.

"Two sub-marginal cells (only one in *Cladolipes*); three, four, or five posterior cells; discal cell closed or open; sub-costal cross-vein near the tip of the auxiliary vein, posterior to the origin of the second vein. Eyes glabrous. *The normal number of the antennal joints is six in the male and not more than ten in the female.* Tibiæ with spurs at the tip; empodia distinct; ungues generally smooth." (Osten-Sacken.)

Obs.—This section embraces only four genera, *Anisomera*, Meig., *Cladolipes*, Loew, *Penthoptera*, Schiner, *Eriocera*, Macq.; the first three occur in Europe and N. America, and the last one predominates in tropical America, Asia, and Africa. No Australian examples have yet been recorded.

Section VI. AMALOPINA.

"Two sub-marginal cells; four or five posterior cells; discal cell closed or open; *sub-costal cross-vein far removed from the tip of the auxiliary vein and anterior to the origin of the second longitudinal vein.* Tibiæ with spurs at the tip; empodia distinct. Eyes pubescent; front usually with a more or less distinct gibbosity. Normal number of antennal joints *sixteen* or *thirteen*." (Osten-Sacken).

Six genera belong here. Four of these are common to Europe and America, and two are known only in N. America; and besides the European and American representatives of this section, the

two species of *Amalopis* hereafter described are the only examples that have been recorded from any other country. The genera fall into three groups, distinguished by the number of antennal joints supported by peculiarities of alar-venation.

Genus 25. Amalopis, Haliday.

Amalopis, Hal., in Ins. Brit. Dipt. p. xv. 1856; *Bophrosia* (ex parte), Rondani, Prod. I. p. 183, 1856; *Crunobia*, Kolenati, Wien. Ent. Mon. IV. p. 391, 1860; (?) *Nasiterna*, Wallengren, Ent. Tidskr. Stockh. pp. 179 and 191, 1881; *Amalopis*, O.-Sacken, Mon. Dipt. N. Amer. IV. p. 260, pl. 2, f. 15 (wing), pl. 4, f. 30 (genitalia), 1869; Studies, II. p. 224, 1887.

"Two sub-marginal cells; five posterior cells; discal cell generally present, sometimes wanting; the sub-costal cross-vein is more or less anterior to the origin of the second longitudinal vein; the second sub-marginal cell is never longer (usually distinctly shorter) than the first posterior cell; the tip of the wing is rounded in both sexes (not sinuate posteriorly as in *Pedicia*). Tibiæ with spurs at the tip; empodia distinct; ungues smooth. Eyes pubescent; front with a gibbosity behind the antennæ; the latter 16-jointed, short (not reaching much behind the collare when bent backwards). Male forceps more or less club-shaped, with stout, branched horny appendages." (Osten-Sacken.)

Obs.—The length of the fourth posterior cell and position of the great cross-vein in *A. nigritarsis* seem peculiar; also the præfurca is unusually short.

384. Amalopis nigritarsis, sp.n.

♂.—Length of antennæ	0·050 inch	... 1·27 millimètres.
Expanse of wings.....	0·380 × 0·090	... 9·64 × 2·27
Size of body.....	0·320 × 0·040	... 8·12 × 1·01
♀.—Length of antennæ	0·050 inch	... 1·27 millimètres.
Expanse of wings.....	0·500 × 0·120	... 12·70 × 3·04
Size of body.....	0·440 × 0·060	... 11·17 × 1·54

Head greyish-brown : rostrum palpi, and antennæ brown or blackish, the two basal joints of latter sometimes ochreous ; first flagellar joint somewhat elongate, the rest globose to elliptical ; extremely short verticils. Collare ochreous, tinged with brown. Thorax ochreous, dull, with three broad black stripes ; intermediate stripe reaching suture ; posterior portion of thorax, with scutellum and metanotum, with a greyish bloom, usually somewhat infuscated with brownish ; pleuræ somewhat tinged with brown, and having a greyish bloom. Halteres ochreous, the club infuscated. Abdomen dusky dull brown, sparingly sprinkled with yellowish pubescence, sometimes the margins of segments tinged with reddish-ochreous ; venter also more or less tinged with same ; genitalia ochreous or reddish-ochreous ; ♂ forceps apparently something like those of *A. inconstans* (Mon. Dipt. N. Amer. Pl. iv. fig. 30), but there is a distinct anal style, and the pair of small horny appendages *(h)* seem to be wanting ; ♀ ovipositor rather short, somewhat curved, the upper and lower valves about equal in length. Coxæ, femora and tibiæ fulvous ; the latter two with a black ring at the apex, the tibiæ also slightly infuscated, sometimes entirely brownish ; tarsi black. Wings slightly tinted with yellowish or pale brownish, fulvous at the the base ; pale greyish clouds (sometimes scarcely perceptible) at origin of præfurca, bases of sub-marginal cells and on the cross-veins ; stigma elongate, pale brownish ; veins brown or blackish, the auxiliary vein somewhat fulvous. Auxiliary vein reaching costa opposite the tip of fifth longitudinal vein ; sub-costal cross-vein situated before origin of præfurca a distance equal to more than twice the length of great cross-vein ; marginal cross-vein its length distant from tip of first longitudinal vein ; præfurca short, originating considerably beyond the middle of the wing, more or less arcuated, usually a little more than half the length of anterior branch of second longitudinal ; second sub-marginal cell a little shorter than the first (in one instance both of equal length, their inner ends and small cross-vein meeting at one point) ; small cross-vein joining petiole of second sub-marginal cell at varying points ; discal cell elongate, as long or longer than third basal

cell, usually closed, sometimes opened posteriorly; great cross-vein joining exactly at inner end of fourth posterior cell which is close up to inner end of discal cell; sixth and seventh longitudinal veins almost straight.

Hab.—Sydney (Masters & Skuse); Mount Kosciusko (4-5000ft.), N.S.W. (Helms); *one specimen in Coll. Australian Museum.* September to March.

Obs.—Apparently distinct from *A. congrua*, Walk. Six specimens only before me.

385. Amalopis congrua, Walker.

Limnobia congrua, Walk., List Dipt. Brit. Mus. I. p. 42, 1848; *Amalopis congrua*, O.-Sacken, Mon. Dipt. N. Amer. IV. p. 264, 1869.

"*Fulva, thorace fusco trivittato, abdomine fusco fasciato, antennis fuscis, pedibus fulvis, coxis femoribusque basi pallidis, alis subfulvis.*

"Body tawny; eyes bronze colour; feelers and palpi brown, the former yellow at the base; chest with three brown stripes, the middle one broad and long; hind borders of the segments of the abdomen brown, and this colour occupies the whole of the segments towards the tip, except the last, which, with its appendages, is bright tawny; legs dull tawny; hips and base of the thighs pale tawny; wings with a very slight tawny tinge; veins brown; poisers whitish-yellow, their knobs darker. Length of of the body, 4 lines; of the wings, 9 lines.

Hab.—Swan River, W. Australia.

Obs.—Unknown to me.

EXPLANATION OF PLATES.

Plate xxi.

Fig. 1. Wing of *Dicranomyia punctipennis* (♀).
Fig. 2. ,, ,, *saxatilis* (♀).
Fig. 3. ,, ,, *marina*.
Fig. 4. ,, ,, *remota* (♀).
Fig. 5. ,, ,, *cuneata* (♂).
Fig. 6. ,, *Thrypticomyia aureipennis* (♂)
Fig. 7. ,, *Trochobola australis* (♂).
Fig. 8. ,, *Libnotes strigivena*.
Fig. 9. ,, *Rhamphidia communis*.
Fig. 10. ,, *Orimarga australis*.
Fig. 11. ,, *Leiponeura gracilis*.
Fig. 12. ,, *Rhypholophus (Amphineurus) umbraticus* (♀).
Fig. 13. ,, *Tasiocera tenuicornis* (♂), the veins denuded of hairs.
Fig. 14. ,, *Gnophomyia fascipennis* (♀)

Plate xxii.

Fig. 15. Wing of *Rhabdomastix Osten-Sackeni* (♂).
Fig. 16. ,, *Lechria singularis* (♂).
Fig. 17. ,, *Trentepohlia australasiæ* (♂).
Fig. 18. ,, *Limnophila leucophæata* (♀).
Fig. 19. ,, ,, *obscuripennis*.
Fig. 20. ,, ,, *aureola* (♂).
Fig. 21. ,, ,, *ocellata* (♀).
Fig. 22. ,, ,, *imitatrix*.
Fig. 23. ,, ,, *antiqua*.
Fig. 24. ,, ,, *interventa* (♀)
Fig. 25. ,, ,, *inordinata* (♂).
Fig. 26. ,, ,, *luctuosa* (♀)
Fig. 27. ,, ,, *levidensis* (♂).
Fig. 28. ,, ,, *Lawsonensis* (♀).

Plate xxiii.

Fig. 29. Wing of *Limnophila australasiæ*.
Fig. 30. ,, *Gynoplistia vilis*.
Fig. 31. ,, ,, *cyanea* (♀).
Fig. 32. ,, ,, *obscurivena* (♀).
Fig. 33. ,, ,, *bella*.
Fig. 34. ,, ,, *Westwoodi* (♀).

PLATE XXIII.—*continued*:—

Fig. 35. Wing of *Gynoplistia Howensis* (♀).
Fig. 36. ,, ,, *melanopyga* (♂).
Fig. 37. ,, ,, *bimaculata* (♂).
Fig. 38. ,, ,, *flavipennis*.
Fig. 39. ,, ,, *viridis* (♂).
Fig. 40. ,, ,, *annulata* (♀).
Fig. 41. ,, ,, *viridithorax* (♀).
Fig. 42. ,, ,, *chalybeia* (♂).

PLATE XXIV.

Fig. 43. Male forceps of *Dicranomyia marina*.
Fig. 44. ,, *Thrypticomyia aureipennis*.
Fig. 45. Portion of antennæ of *Thrypticomyia aureipennis* (♂).
Fig. 46. Labium and palpi of *Geranomyia picta*.
Fig. 47. ,, ,, *lutulenta* and *annulata*.
Fig. 48. ,, ,, *fusca*.
Fig. 49. Male forceps of *Geranomyia picta*.
Fig. 50. ,, ,, *fusca*.
Fig. 51. ,, *Limnobia bidentata*.
Fig. 52. ,, *Trochobola australis*.
Fig. 53. Palpus of *Leiponeura brevivena*.
Fig. 54. Antenna of *Leiponeura brevivena*.
Fig. 55. One-half of a male forceps of *Tasiocera gracilicornis*.
Fig. 56. Antenna of *Tasiocera gracilicornis*.
Fig. 57. Male forceps of *Rhabdomastix Osten-Sackeni*.
Fig. 58. ,, *Lechria singularis*.
Fig. 59. ,, *Trentepohlia australasiæ*.
Fig. 60. Mouth-parts of *Conosia irrorata*; *aa*, palpi.
Fig. 61. Antenna of *Conosia irrorata*.
Fig. 62. One half of male forceps of *Conosia irrorata*.
Fig. 63. Male forceps of *Limnophila antigua*.
Fig. 64. ,, ,, *australasiæ*.
Fig. 65. One-half of male forceps of *Gynoplistia vilis*
Fig. 66. Male forceps of *Gynoplistia bella*.
Fig. 67. ,, ,, *melanopyga*.
Fig. 68. ,, ,, *bimaculata*.
Fig. 69. ,, ,, *flavipennis*.
Fig. 70. ,, ,, *viridis*.

Obs.—For full terminology of venation, male forceps, etc., see Mon. Dipt. N. Amer., IV., 1869, pp. 26-35, by Baron O.-Sacken.

Note.—All the figures drawn to the same scale, irrespective of their natural size.